

**SITE PREPARATION NOTES**

- PRIOR TO STARTING ANY DEMOLITION CONTRACTOR IS RESPONSIBLE FOR:
  - ENSURE COPIES OF ALL PERMITS AND APPROVALS ARE ON SITE FOR REVIEW.
  - THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO SITE DISTURBANCE.
  - ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE, SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL UNDERGROUND UTILITIES IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS.
  - PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.
  - FAMILIARIZE THEMSELVES WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENT AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR PROJECT. THE CONTRACTOR SHALL PROVIDE THE OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTION AND UTILITY COMPANY REQUIREMENTS.
  - COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES.
  - A COMPLETE INSPECTION FOR CONTAMINANTS, BY A LICENSED ENVIRONMENTAL TESTING AGENCY, OF ALL BUILDINGS AND/OR STRUCTURES TO BE REMOVED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL REGULATIONS. ALL CONTAMINANTS SHALL BE REMOVED AND DISPOSED OF BY A FEDERALLY LICENSED CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. ALL ENVIRONMENTAL WORK INCLUDING HAZARDOUS MATERIAL, SOILS, ASBESTOS, OR OTHER REFERENCED OR IMPLIED HEREIN IS SOLELY THE RESPONSIBILITY OF THE OWNER'S ENVIRONMENTAL CONSULTANT.
  - THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISIONS. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS, TO INSURE PUBLIC AND CONTRACTOR SAFETY.
  - THE CONTRACTOR SHALL PROVIDE ALL THE "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE.
- IN ABSENCE OF SPECIFIC SPECIFICATION, THE CONTRACTOR SHALL PERFORM EARTH MOVEMENT ACTIVITIES, DEMOLITION AND REMOVAL OF ALL FOUNDATION WALLS, FOOTINGS, AND OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE IN ACCORDANCE WITH DIRECTION BY OWNER'S GEOTECHNICAL ENGINEER.
- DEMOLITION ACTIVITIES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED PROPERTY LINES, WITHOUT WRITTEN PERMISSION OF THE OWNER, AND/OR APPROPRIATE GOVERNMENT AGENCY.
- USE DUST CONTROL MEASURES TO LIMIT THE AMOUNT OF AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR TO WITHIN FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
- CONTRACTOR IS RESPONSIBLE TO SAFEGUARD SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE UNAUTHORIZED ENTRY OF PERSONS AT ANY TIME.
- THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
- EXPLOSIVES SHALL NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
- ALL UTILITY CONNECTIONS TO ADJACENT BUILDINGS MUST STAY ACTIVE DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE TO ENSURE SHUT OFF, DISCONNECT, AND/OR CAPPING OF ALL UTILITIES TO THE SITE INCLUDING, BUT NOT LIMITED TO, WATER, SEWER, ELECTRIC, CABLE, TELEPHONE, ETC. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL UTILITY SHUT OFFS AND LETTERS, OBTAINING ALL PERMITS TO COMPLETE ALL PHASES OF THE PROJECT.
- ALL STREET APPURTENANCES (INCLUDING SIGNS, POLES, TREES & FENCING) WITHIN THE LIMITS SHOWN ARE TO BE REMOVED AND DISPOSED OFF-SITE UNLESS OTHERWISE NOTED.
- EXISTING LIGHTING AND UTILITY POLE REMOVALS ARE TO BE PERFORMED BY THE APPROPRIATE UTILITY COMPANY.
- ALL UNDERGROUND UTILITIES, LINES, PIPING, STRUCTURES, FOUNDATIONS, VAULTS AND BUILDING FRAGMENTS ASSOCIATED WITH FORMER BUILDINGS, WITHIN THE PROJECT BOUNDARY, ARE TO BE REMOVED AND DISPOSED OFF-SITE.
- DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OFF-SITE IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES, ORDINANCES, AND LAWS.

**NOTES**

- TREE REMOVAL PERMIT SHALL BE SECURED PRIOR TO ANY SITE DISTURBANCE.
- ALL DEBRIS, TREES, STUMPS, VEGETATION WITHIN THE PROJECT'S BOUNDARY SHALL BE REMOVED AS PART OF THIS PROJECT AND BE DISPOSED OF OFF-SITE.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES THAT CONSTRUCTION OF THE WORK UNDER THIS PLAN WILL PASS THROUGH AREAS WHERE THEIR SERVICES EXIST. NOTIFICATION TO THE UTILITIES MUST BE MADE IN A SUFFICIENT AMOUNT OF TIME IN ADVANCE (MIN. 72 HOURS) PRIOR TO START OF ANY CONSTRUCTION WORK IN THE AFFECTED AREAS.

**TREE PRESERVATION STANDARDS (IN ACCORDANCE WITH SECTION 188-191 (G))**

- NO SOIL SHALL BE DEPOSITED OR REMOVED WITHIN THE DRILLPIE OR WITHIN EIGHT FEET, WHICHEVER IS GREATER, OF ANY EXISTING TREE TRUNK. NO MACHINERY OR MATERIALS SHALL BE STORED, DEPOSITED, CLEANED OR OPERATED WITHIN THE DRILLPIE OR WITHIN EIGHT FEET, WHICHEVER IS GREATER, OF ANY EXISTING TRUNK.
- DRILLPIES OF SPECIMEN TREES AND ISOLATED GROUPINGS OF TREES WHICH ARE TO REMAIN ON SITE SHALL BE CLEARLY PROTECTED BY SNOW FENCING OR ORANGE CONSTRUCTION FENCE WITH A HEIGHT OF FOUR FEET, LOCATED AS CLOSE TO THE AREA OF DISTURBANCE AS POSSIBLE. THIS PROTECTION BY SNOW FENCING OR ORANGE CONSTRUCTION FENCE SHALL BE INSTALLED IMMEDIATELY PRIOR TO AND MAINTAINED DURING CONSTRUCTION AT THE SITE.
- THE GRADE OF THE LAND LOCATED ALONG THE DRILLPIE SHALL NOT BE RAISED OR LOWERED MORE THAN SIX INCHES UNLESS COMPENSATED FOR BY WELLING OR RETAINING METHODS AND IN NO EVENT SHALL THE WELLING OR RETAINING WALL METHODS BE LESS THAN EIGHT FEET FROM THE TRUNK OF THE TREE.
- ALL DEBRIS CREATED DURING TREE REMOVAL AND REPLACEMENT SHALL BE REMOVED FROM THE LOT FOR DISPOSAL BEFORE ANY CERTIFICATE OF OCCUPANCY SHALL BE ISSUED.
- DURING THE PERIOD OF CONSTRUCTION OR REPAIR OF ANY BUILDING OR STRUCTURE OR IN THE CONSTRUCTION OR REPAIR OF A STREET, ROAD AND HIGHWAY NOT YET DEDICATED TO THE TOWNSHIP, AND ANY PROJECT SUBJECT TO TOWNSHIP INSPECTION, THE OWNER THEREOF OR THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PLACE GUARDS EIGHT FEET FROM THE DRILLPIE AROUND ALL NEARBY TREES ON TOWNSHIP LAND OR WITHIN PUBLIC RIGHT-OF-WAYS SO AS TO EFFECTIVELY PREVENT INJURY TO SUCH TREES. THE OWNER AND/OR CONTRACTOR SHALL EACH BE RESPONSIBLE FOR THE PROTECTION OF THE TREES SHALL SUBJECT THE OWNER AND BUILDER TO A PENALTY AS HEREINAFTER PROVIDED. PILE, HEAP OR STORE ANY BUILDING MATERIAL, SOIL, DEBRIS, OR ANY OTHER MATTER, OR MAKE ANY MORTAR OR CEMENT, WITHIN A MINIMUM DISTANCE OF EIGHT FEET OF THE DRILLPIE OF A TREE, A SIDEWALK THAT IS CONTAINED IN THE RIGHT-OF-WAY OR OPEN SPACE IS EXCEPTED.
- WHERE CLEARING AND CONSTRUCTION ON THE SITE RESULTS IN THE ACCIDENTAL REMOVAL OF TREES OR SEVERE DAMAGE, WHICH WILL EVENTUALLY RESULT IN REMOVAL OF ANY TREE OR THE REMOVAL OF ANY TREE DELIMITED IN THE REPLACEMENT PLAN, SUCH REMOVAL OR REPLACEMENT FOR DAMAGED TREE SHALL BE ON A ONE-FOR-ONE BASIS BY TREES OF FOUR-INCH CALIPER. IF THE DAMAGED OR REMOVED TREE IS BETWEEN 2 1/2 AND 16 INCHES DBH, IF THE DAMAGED OR REMOVED TREE IS GREATER THAN 16 DBH, REPLACEMENT SHALL BE AS SET FORTH IN § 188-194C.

TREE / VEGETATION REMOVAL AREA (1.83 AC)  
(AREA INCLUDES INDIVIDUAL TREES TO BE REMOVED)

**TREE REPLACEMENT CALCULATIONS**

TOTAL WOODED AREA ON-SITE = 3.82 ACRES OR 166,320 SF  
TOTAL AREA OF TREE REMOVAL = 1.83 ACRES OR 79,657 SF  
NUMBER OF REPLACEMENT TREES PROPOSED = 57

**MONETARY CALCULATION FOR REQUIRED TREE REMOVAL FEES**

\$35,000 (MAX) x 1.83 (REMOVAL AREA) = \$64,050

CREDIT FOR NEW TREES PLANTED  
\$300 x 57 = \$17,100

TOTAL TREE CONTRIBUTION REQUIRED  
\$64,050 - \$17,100 = \$46,950

**LEGEND**

EXISTING	PROPOSED
BOUNDARY LINE	BOUNDARY LINE
CONTOUR LINE	CONTOUR LINE
SPOT ELEVATION	SPOT ELEVATION
BUILDING	BUILDING
WALL	WALL
GAS	GAS
WATER	WATER
INLET	INLET
STORM	STORM
SANITARY MAIN	SANITARY MAIN
SANITARY LATERAL	SANITARY LATERAL
OVERHEAD WIRE	OVERHEAD WIRE
ELECTRIC	ELECTRIC
TELEPHONE	TELEPHONE
UTILITY POLE	UTILITY POLE
HYDRANT	HYDRANT
SIGN POST	SIGN POST
FENCE	FENCE
LIGHT FIXTURE	LIGHT FIXTURE
TEST PIT LOCATION	TEST PIT LOCATION
GRADE FLOW ARROW	GRADE FLOW ARROW
SWALE CENTER LINE	SWALE CENTER LINE
CENTER OF STREAM	CENTER OF STREAM
RIPARIAN ZONE	RIPARIAN ZONE
STREAM CORRIDOR	STREAM CORRIDOR
FLOOD HAZARD LIMIT	FLOOD HAZARD LIMIT
TRANSITION AREA	TRANSITION AREA
PRELIM. FIRM ZONE A-E	PRELIM. FIRM ZONE A-E
PRELIM. FIRM ZONE X	PRELIM. FIRM ZONE X

**PROJECT INFORMATION**

PROJECT NAME: 289 SQUANKUM ROAD

PROJECT LOCATION: BLOCK 49, LOT 7, 289 SQUANKUM ROAD, TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NJ

OWNER: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMINGDALE, NJ 07727

APPLICANT: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS:

ATTORNEY: THE ACCIANO LAW OFFICES, FRANCIS C. ACCIANO, ESQUIRE, 80 WEST MAIN STREET, FRIEHOOD, NJ 07728

ARCHITECT: PARALLEL ARCHITECTURAL GROUP, 494 BROADWAY, SUITE 3, LONG BRANCH, NJ 07740

SURVEYOR: CLEARPOINT SERVICES LLC, 2105 W. COUNTY LINE ROAD, SUITE B, JACKSON, NJ 08527

IN SITE Engineering & Surveying & Planning

CALL BEFORE YOU DIG: NJ ONE CALL, 800-22-1900

DATE: 01/30/19

DRAWN BY: LBC

CHECKED BY: JLF

NOT FOR CONSTRUCTION

APPROVED BY:

PLAN INFORMATION

PRELIMINARY & FINAL MAJOR SITE PLAN

SHEET TITLE: SITE PREPARATION & WOODLANDS MANAGEMENT PLAN

SHEET NO.: C201



PROJECT NAME

289 SQUANKUM ROAD

BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

SMITH FAMILY PROPERTIES, LLC  
P.O. BOX 625  
FARMINGDALE, NJ 07727

SMITH FAMILY PROPERTIES, LLC  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

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80 WEST MAIN STREET  
FREEHOLD, NJ 07728

ARCHITECT:  
PARABELL ARCHITECTURAL GROUP  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

SURVEYOR:  
CLEARPOINT SERVICES LLC  
2105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527



CALL BEFORE YOU DIG  
NJ ONE CALL 800-272-1900

UTILITY	RED
WATER	YELLOW
SEWER	BLUE
TELEPHONE	GREEN
POWER	BLACK
TEMP. SENS. WIRE	MAGENTA
PROPOSED UTILITY	WHITE



INSITE Engineering, LLC  
CERTIFICATE OF AUTHORIZATION: 246A28083200  
1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08738  
732-531-7100 (PH) 732-531-7244 (FAX)  
inSite@inSiteEng.net www.inSiteEng.net

LICENSED IN: NEW JERSEY, NEW YORK, PENNSYLVANIA  
DELAWARE, CONNECTICUT, NORTH CAROLINA,  
COLORADO, & DISTRICT OF COLUMBIA

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**JASON L. FICHTER, PE, PP, CFM, CME**  
NJPE 33316 NJPPP #728 PAPE #1988  
DEPE 3813 NYPE 90236 CTE 23291  
NCP 33336 DCPE 900882 COPE 36605

REVISIONS

Rev #	Date	Description
4	12/14/21	REVISED PHASING
3	08/19/21	REV PER COUNTY COMMENTS
2	03/11/21	REV PER TOWNSHIP COMMENTS
1	01/30/21	REV PER TOWNSHIP COMMENTS
0	01/30/21	INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC  
DATE: 01/30/19 DRAWN BY: LBC  
JOB #: 17-991-01 CHECKED BY: JLF  
CAD ID: 17-991-01\_01

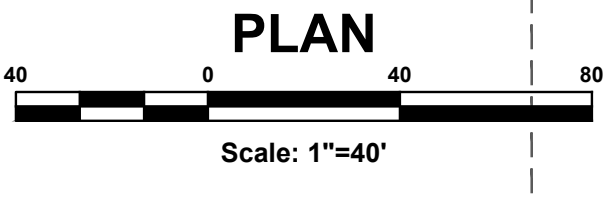
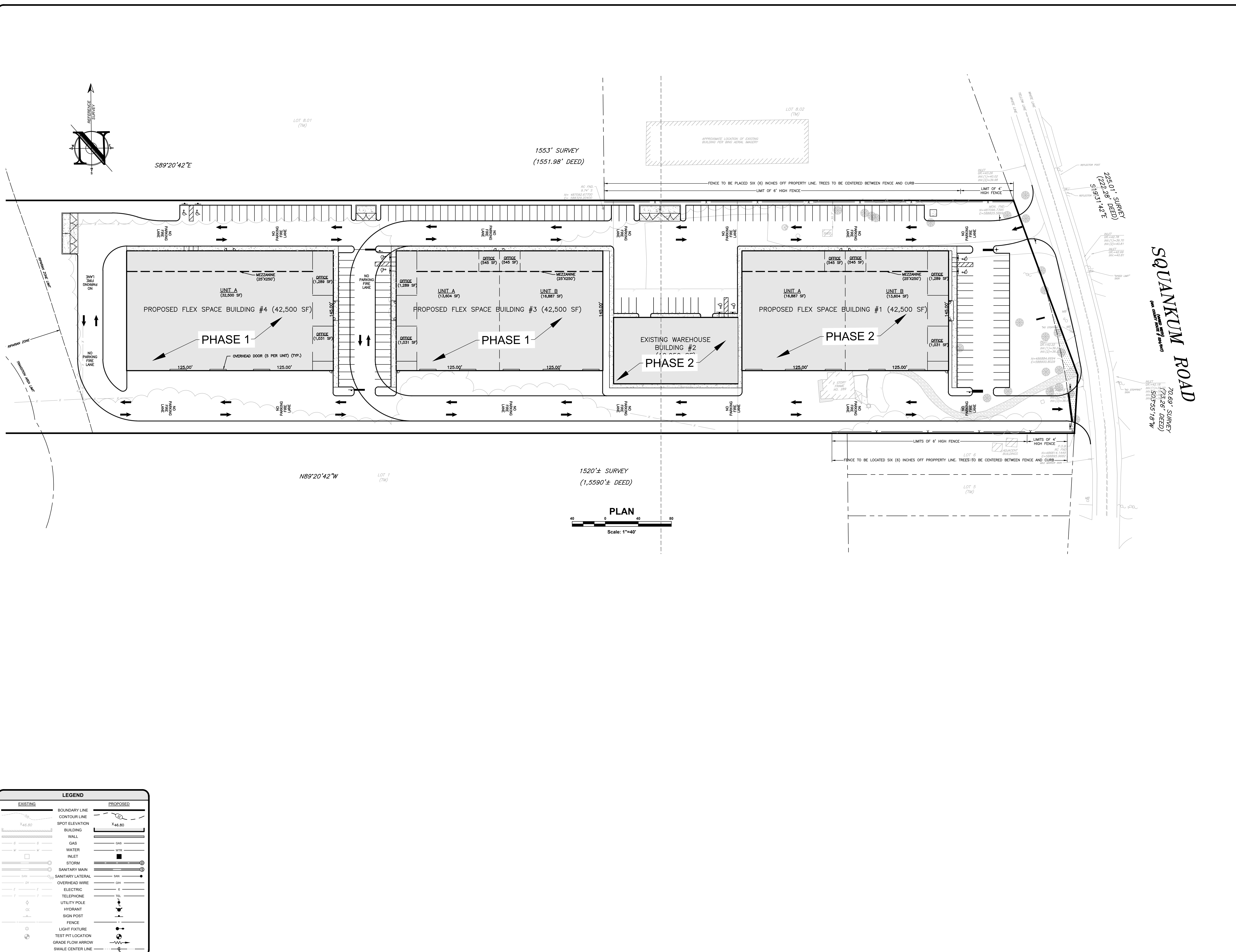
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PLAN INFORMATION

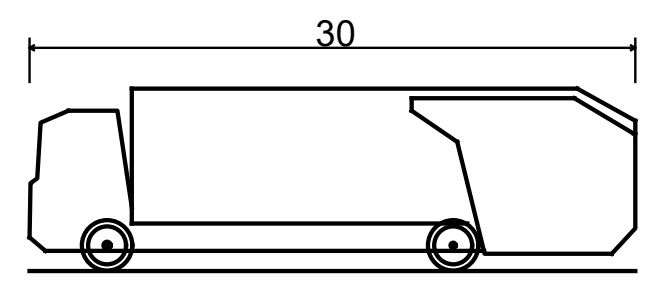
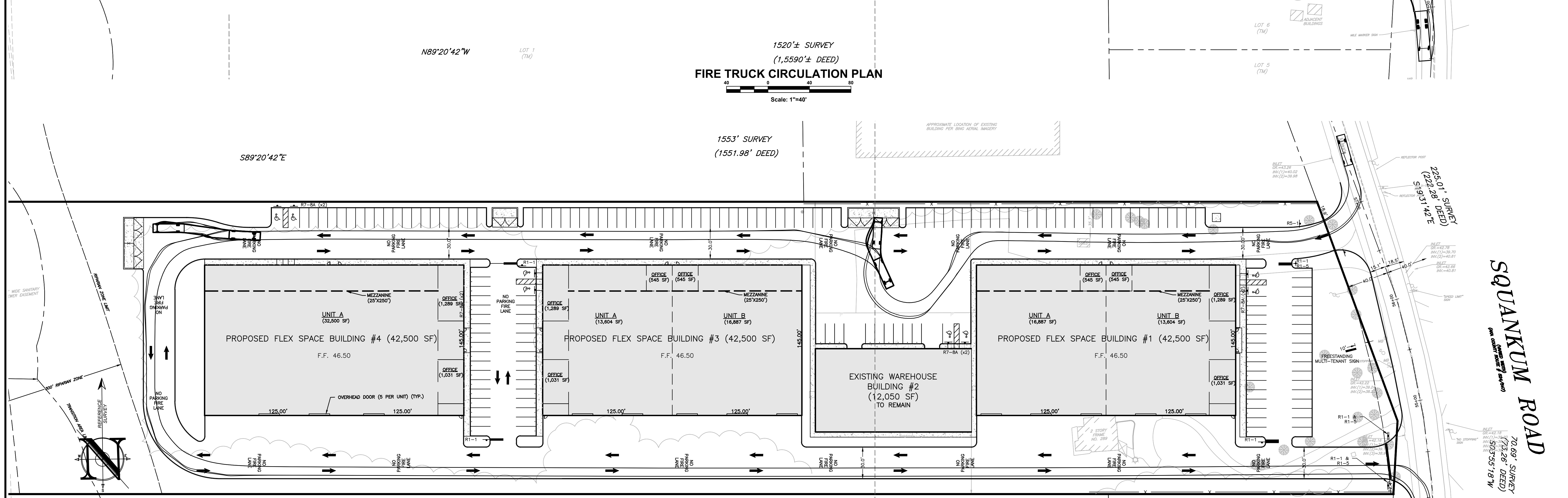
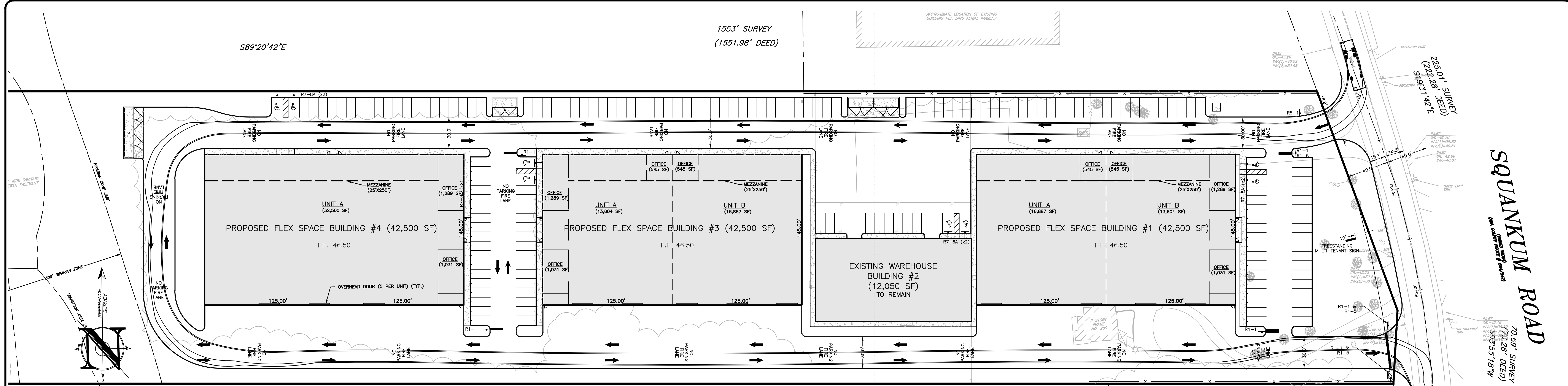
PRELIMINARY & FINAL  
MAJOR SITE PLAN

PHASING PLAN

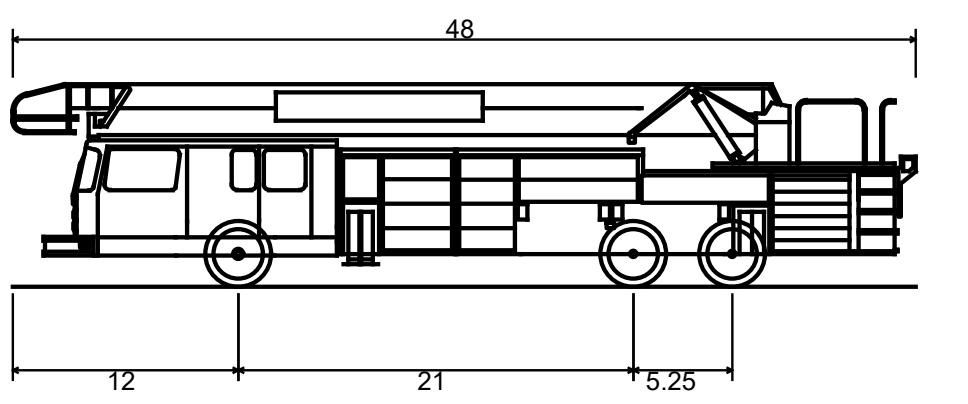
C301



LEGEND	
EXISTING	PROPOSED
BOUNDARY LINE	BOUNDARY LINE
CONTOUR LINE	CONTOUR LINE
SPOT ELEVATION	SPOT ELEVATION
BUILDING	BUILDING
WALL	WALL
GAS	GAS
WATER	WATER
INLET	INLET
STORM	STORM
SANITARY MAIN	SANITARY MAIN
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UTILITY POLE	UTILITY POLE
HYDRANT	HYDRANT
SIGN POST	SIGN POST
FENCE	FENCE
LIGHT FIXTURE	LIGHT FIXTURE
TEST PIT LOCATION	TEST PIT LOCATION
GRADE FLOW ARROW	GRADE FLOW ARROW
SWALE CENTER LINE	SWALE CENTER LINE



Garbage Truck	
Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	41.800ft



Howell Fire Truck	
Overall Length	48.000ft
Overall Width	11.670ft
Overall Body Height	10.782ft
Min Body Ground Clearance	1.212ft
Track Width	10.000ft
Lock-to-lock time	5.00s
Wall to Wall Turning Radius	50.000ft

**PROJECT INFORMATION**

PROJECT NAME:  
**289 SQUANKUM ROAD**

PROJECT LOCATION:  
BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

OWNER:  
**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT:  
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FARMINGDALE, NJ 07727

**APPLICANT'S PROFESSIONALS**

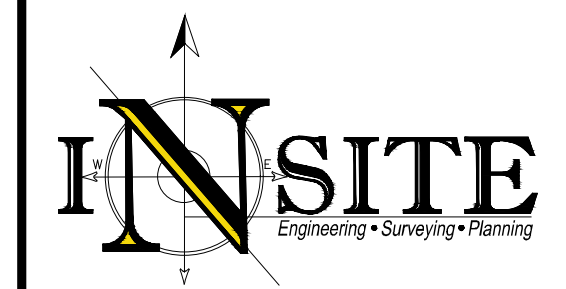
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JACKSON, NJ 08527



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NJ ONE CALL: 800-272-1900  
(In NJ 2 days prior to excavation)



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COLORADO, & DISTRICT OF COLUMBIA

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**Jason L. Fichter, P.E., P.P., C.F.M., C.M.E.**  
NJPE #33118 NLPPE #728 PAPE #1988  
DCPE #811 WPE #02295 CTR #23291  
NCPPE #33336 DCPE #00882 COPE #6605

**REVISIONS**

Rev #	DATE	DESCRIPTION
4	12/14/21	REVISED PHASING
3	08/19/21	REV PER COUNTY COMMENTS
2	03/11/20	REV PER TOWNSHIP COMMENTS
1	01/30/19	REV PER DCDO COMMENTS
0	01/30/18	INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC  
DATE: 01/30/19 DRAWN BY: LBC  
JOB #: 17-991-01 CHECKED BY: JLF  
CAD ID: 17-991-01\_10

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 APPROVED BY:

**PLAN INFORMATION**

DRAWING TITLE:  
**PRELIMINARY & FINAL MAJOR SITE PLAN**

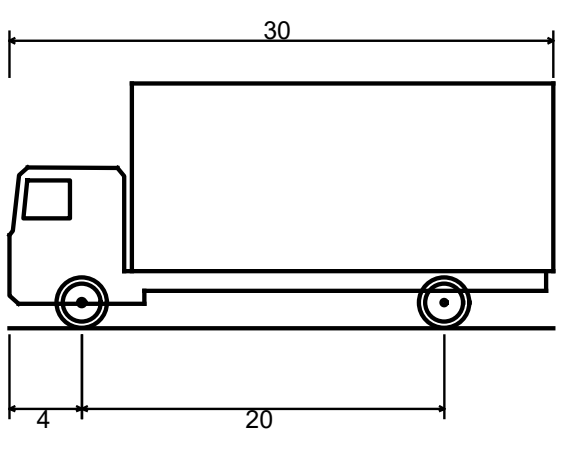
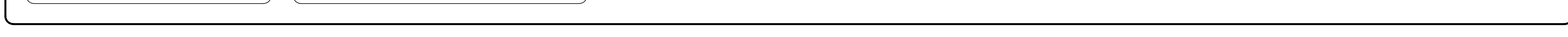
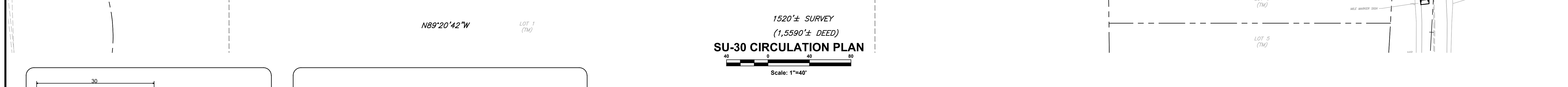
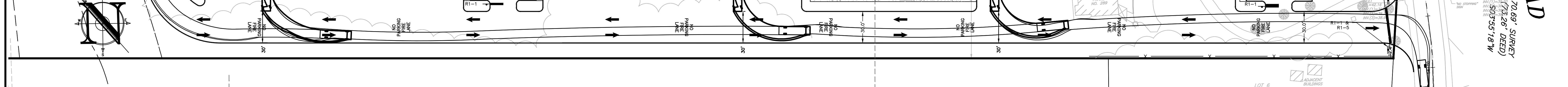
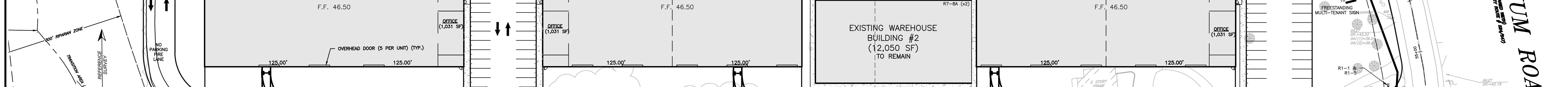
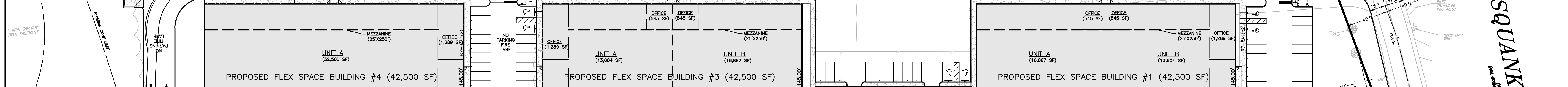
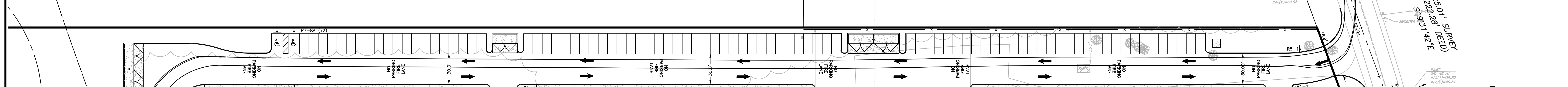
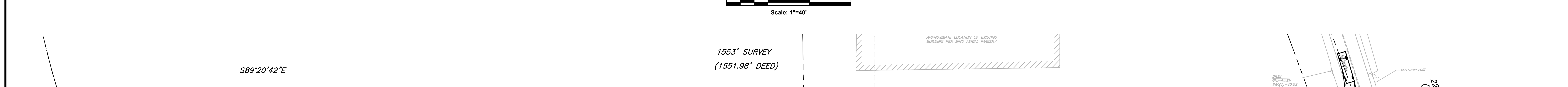
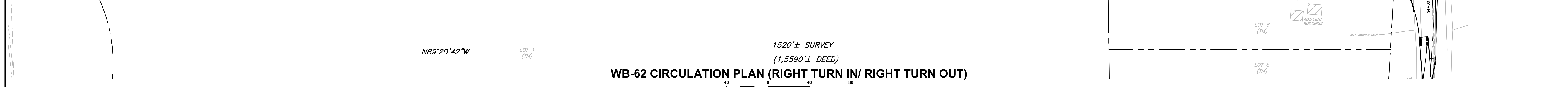
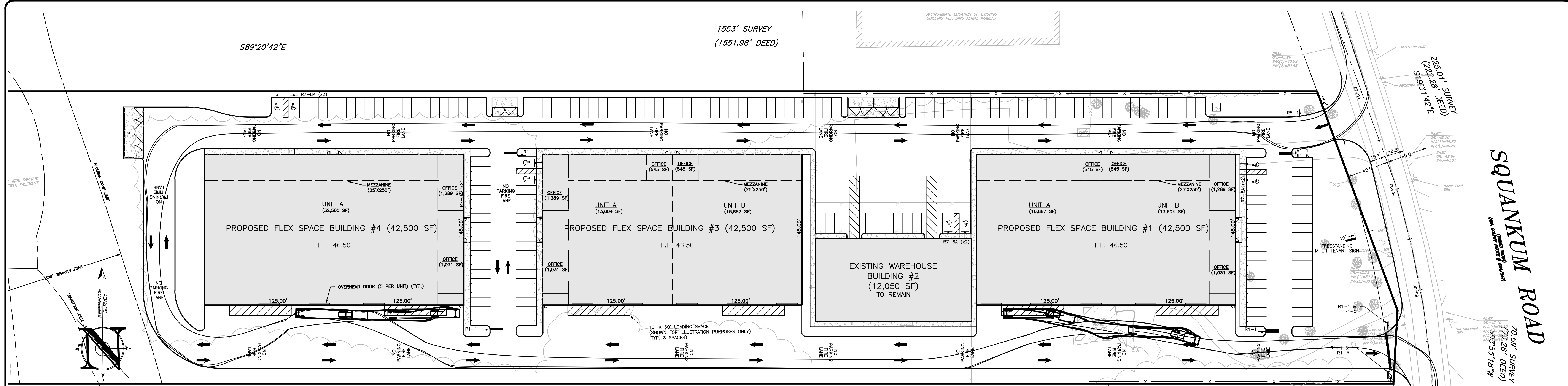
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SHEET NO.:  
**C302**

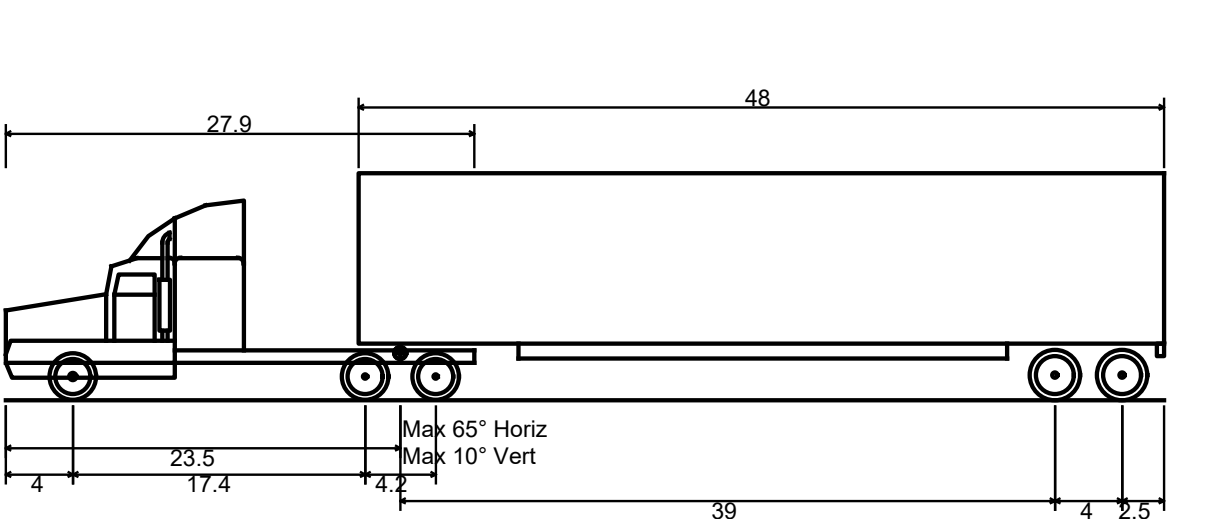
**SQUANKUM ROAD**  
70.69' SURVEY (73.26' DEED)  
50755'18" W

**SQUANKUM ROAD**  
70.69' SURVEY (73.26' DEED)  
50755'18" W

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SU-30 - Single Unit Truck	
Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	41.800ft



WB-62 - Interstate Semi-Trailer	
Overall Length	69.000ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.354ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°

**PROJECT INFORMATION**

**289 SQUANKUM ROAD**

**SQUANKUM ROAD**

**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

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FARMINGDALE, NJ 07727

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**ATTORNEY:**  
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80 WEST MAIN STREET  
FREEHOLD, NJ 07728

**ARCHITECT:**  
PARABELL ARCHITECTURAL GROUP  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

**SURVEYOR:**  
CLEARPOINT SERVICES LLC  
2105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527

**IN SITE**  
Engineering • Surveying • Planning

**CERTIFICATE OF AUTHORIZATION:** 246A28083200  
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732-537-1100 (PH) 732-537-7244 (FAX)  
inSite@inSiteEng.net www.inSiteEng.net

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**JASON L. FICHTER, P.E., P.P., C.F.M., C.M.E.**  
NJPE 33118 NJPPP #728 PAPE #1988  
DCPE 3813 NJPE 90235 CTRF 23291  
NCPCE 33336 DCPE 900882 COPE 36605

**REVISIONS**

REV. NO.	DATE	DESCRIPTION
4	12/14/21	REVISED PHASING
3	08/24/21	REV. PER TOWNSHIP COMMENTS
2	03/11/20	REV. PER TOWNSHIP COMMENTS
1	01/30/19	REV. PER TOWNSHIP COMMENTS
0	01/30/18	INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC  
DATE: 01/30/19 DRAWN BY: LBC  
JOB #: 17-991-01 CHECKED BY: JLF  
CAD ID: 17-991-01\_10

NOT FOR CONSTRUCTION

APPROVED BY: \_\_\_\_\_

FOR CONSTRUCTION

**PLAN INFORMATION**

**PRELIMINARY & FINAL MAJOR SITE PLAN**

**SHEET TITLE:**  
CIRCULATION PLAN

**SHEET NO.:**  
C303

File: N:\Projects\2017 - 2021\2017-01-17-289 Squankum Road (Final) - NJ\17010100\Site\01-Circulation.dwg -> C303 Circulation Plan  
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PROJECT INFORMATION

PROJECT NAME:

289  
SQUANKUM  
ROAD

PROJECT LOCATION:  
BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

OWNER:  
SMITH FAMILY PROPERTIES, LLC  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT:  
SMITH FAMILY PROPERTIES, LLC  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

ATTORNEY:  
THE ACCIANO LAW OFFICES  
FRANCIS C. ACCIANO, ESQUIRE  
80 WEST MAIN STREET  
FREEHOLD, NJ 07728

ARCHITECT:  
PARALLEL ARCHITECTURAL GROUP  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

SURVEYOR:  
CLEARPOINT SERVICES LLC  
2105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527



CALL BEFORE YOU DIG!  
NJ ONE CALL: 800-272-1900  
(NJ One Call is a not-for-profit organization)

OWNER:	RED
ARCHITECT:	GREEN
ENGINEER:	YELLOW
UTILITY:	BLUE
TEMP. SIGNAGE:	MAGENTA
PROPOSED SIGNAGE:	WHITE



INSITE Engineering, LLC  
CERTIFICATE OF AUTHORIZATION: 246A28083200  
1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08786  
732-537-7100 (PH) 732-537-7244 (FAX)  
info@inSiteEng.net www.inSiteEng.net

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*Jason L. Fichter, PE, PP, CFM, CME*  
NJPE #3118 NJPP #728 PAPE #1968  
DCPE #813 NYPE #02295 CTR #23291  
NCP# 33336 DCPE #00082 COPE #6605

REVISIONS

Rev #	DATE	DESCRIPTION
4	12/14/21	REVISED PHASING
3	08/15/21	REV. PER COUNTY COMMENTS
2	03/11/21	REV. PER TOWNSHIP COMMENTS
1	03/07/21	REV. PER TOWNSHIP COMMENTS
0	01/30/21	INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC

DATE: 01/30/19 DRAWN BY: LBC

JOB #: 17-991-01 CHECKED BY: JLF

CAD ID: 17-991-01\_00

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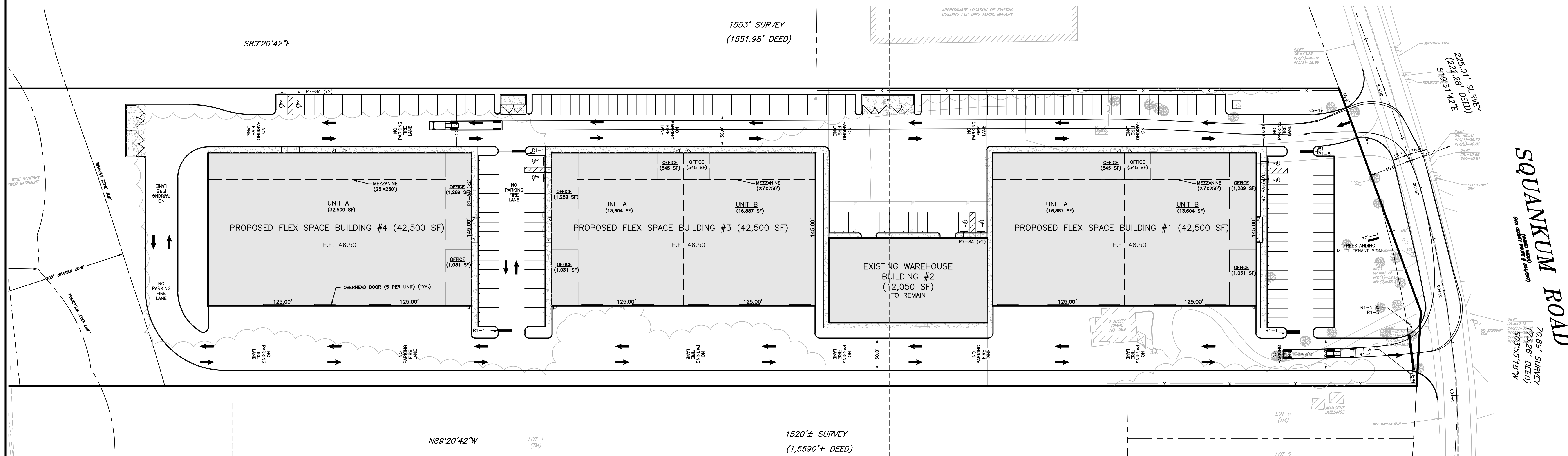
APPROVED BY:

PLAN INFORMATION

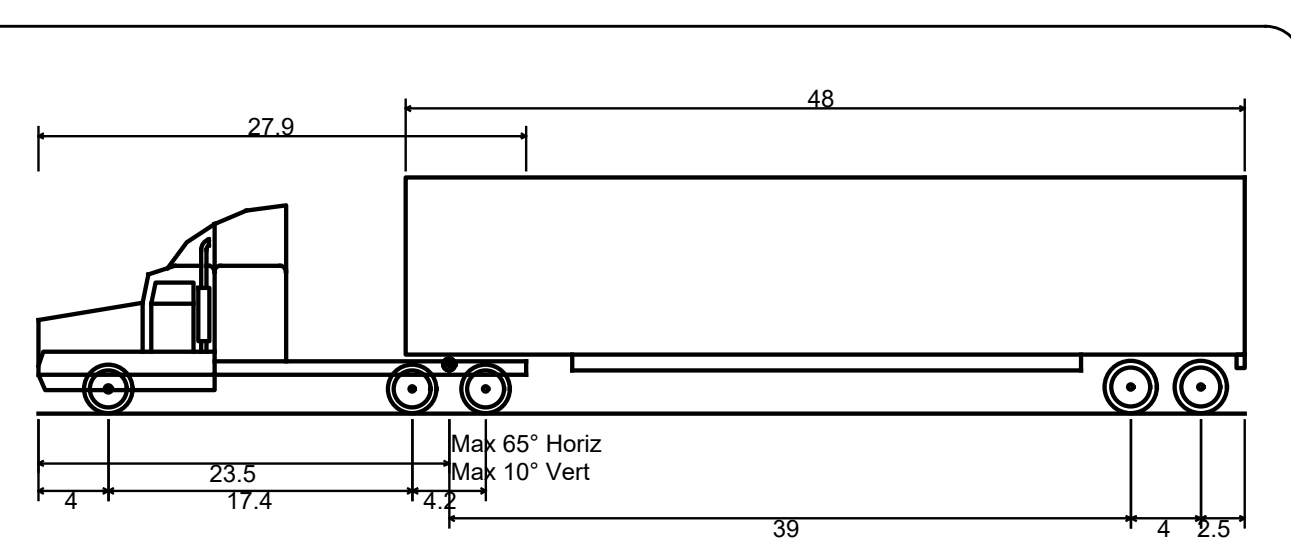
PRELIMINARY & FINAL  
MAJOR SITE PLAN

SHEET TITLE:  
CIRCULATION PLAN

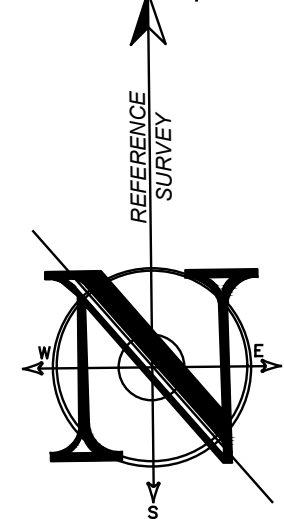
SHEET NO.:  
C304



WB-62 CIRCULATION PLAN (LEFT TURN IN/LEFT TURN OUT)



WB-62 - Interstate Semi-Trailer	69.000ft
Overall Length	8.500ft
Overall Width	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°



File: S:\Projects\17-991-01 - 289 Squankum Road (Howell, NJ)\17-991-01-00-Circulation.dwg -> CDM Circulation Plan  
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PROJECT NAME: 289 SQUANKUM ROAD

SMITH FAMILY PROPERTIES, LLC

SMITH FAMILY PROPERTIES, LLC

APPLICANT'S PROFESSIONALS

ATTORNEY: THE ACCIANO LAW OFFICES

ARCHITECT: PARALLEL ARCHITECTURAL GROUP

SURVEYOR: CLEARPOINT SERVICES LLC

IN SITE Engineering - Surveying - Planning

CERTIFICATE OF AUTHORIZATION: 246A28083200

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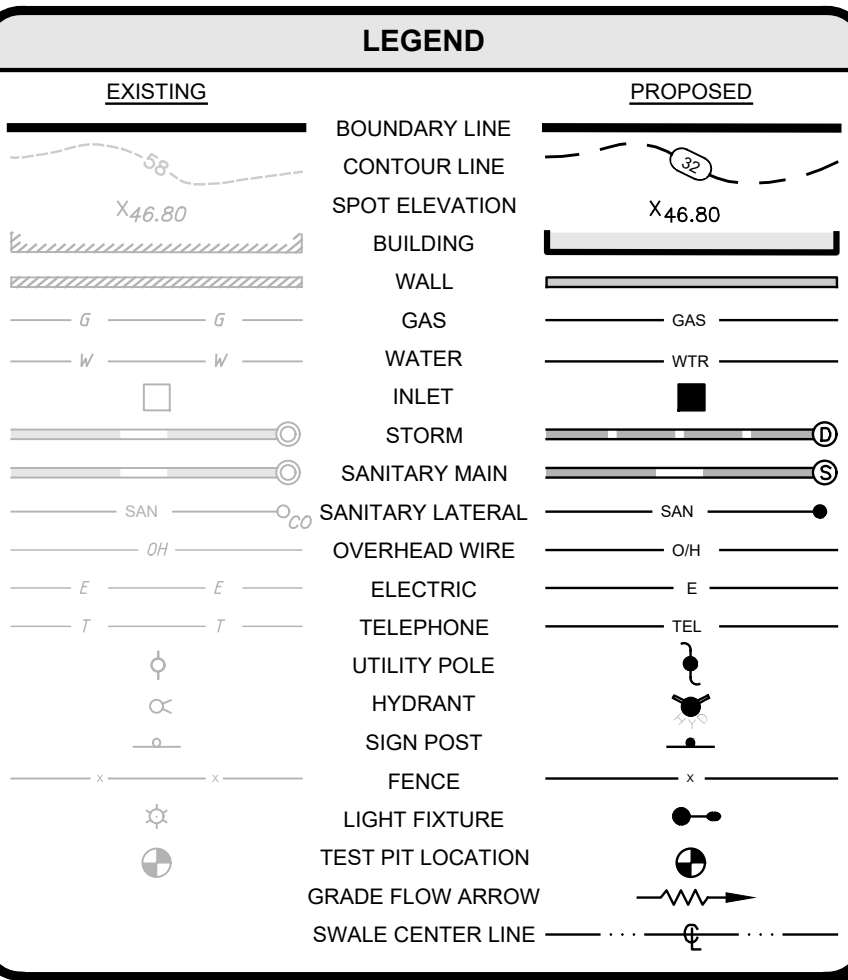
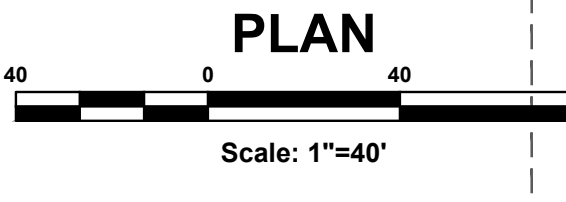
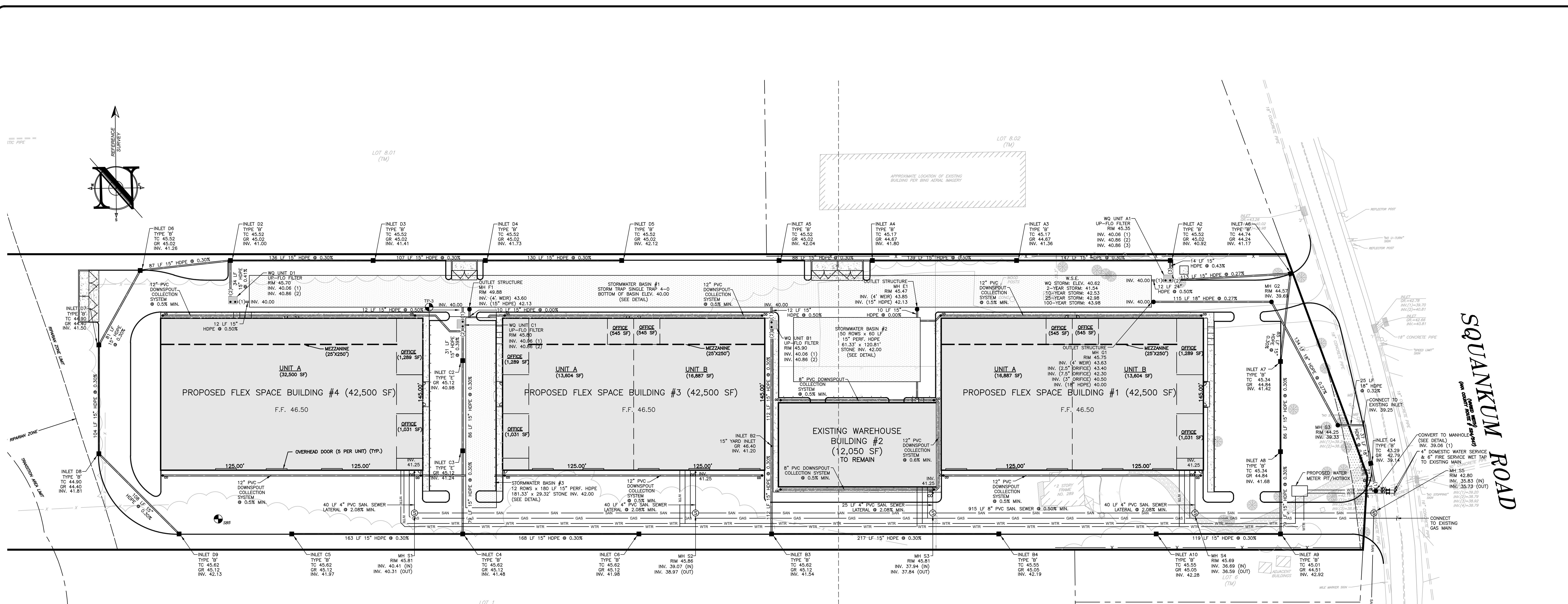
REVISIONS

PLAN INFORMATION

PRELIMINARY & FINAL MAJOR SITE PLAN

UTILITY PLAN

C500



- UTILITY NOTES: 1. ALL CONSTRUCTION SHALL CONFORM WITH ANY APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS...

File: N:\Projects\289 Squankum Road (Revised) (7/17/19)\101000\101000-289-Squankum-Road.dwg - C500 Utility Plan (2)

PROJECT INFORMATION

PROJECT NAME:

289 SQUANKUM ROAD

PROJECT LOCATION: BLOCK 49, LOT 7, 289 SQUANKUM ROAD, TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NJ

OWNER: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMINGDALE, NJ 07727

APPLICANT: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

ATTORNEY: THE ACCIANO LAW OFFICES, FRANCIS C. ACCIANO, ESQUIRE, 80 WEST MAIN STREET, FREEHOLD, NJ 07728

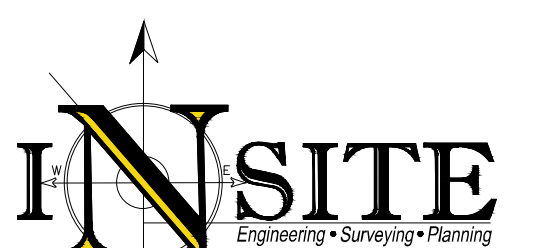
ARCHITECT: PARALLEL ARCHITECTURAL GROUP, 494 BROADWAY, SUITE 3, LONG BRANCH, NJ 07740

SURVEYOR: CLEARPOINT SERVICES LLC, 2105 W. COUNTY LINE ROAD, SUITE B, JACKSON, NJ 08527



CALL BEFORE YOU DIG, NJ ONE CALL: 800-272-1900

Table with utility types and colors: ELECTRIC (RED), GAS (YELLOW), COMMUNICATIONS (BLUE), WATER (GREEN), TEMP. SENS. SENSORS (WHITE), REPAIRS (WHITE)



INSITE Engineering, LLC, CERTIFICATE OF AUTHORIZATION: 246248083200, 1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08738

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Signature of Jason L. Fichter, P.E., P.P., CFM, CME, NJPE 33316, NJPPP #726, PAPE #1968, DPE #3813, WPE #02295, CPE #23291, NCPPE #33336, DCPE #000882, COPE #6605

REVISIONS

Table with columns: No., Date, Description, By, Appr. (empty)

SCALE: AS SHOWN, DESIGNED BY: DDC, DATE: 01/30/19, DRAWN BY: LBC, JOB #: 17-991-01, CHECKED BY: JLF, CAD: 17-991-01\_0

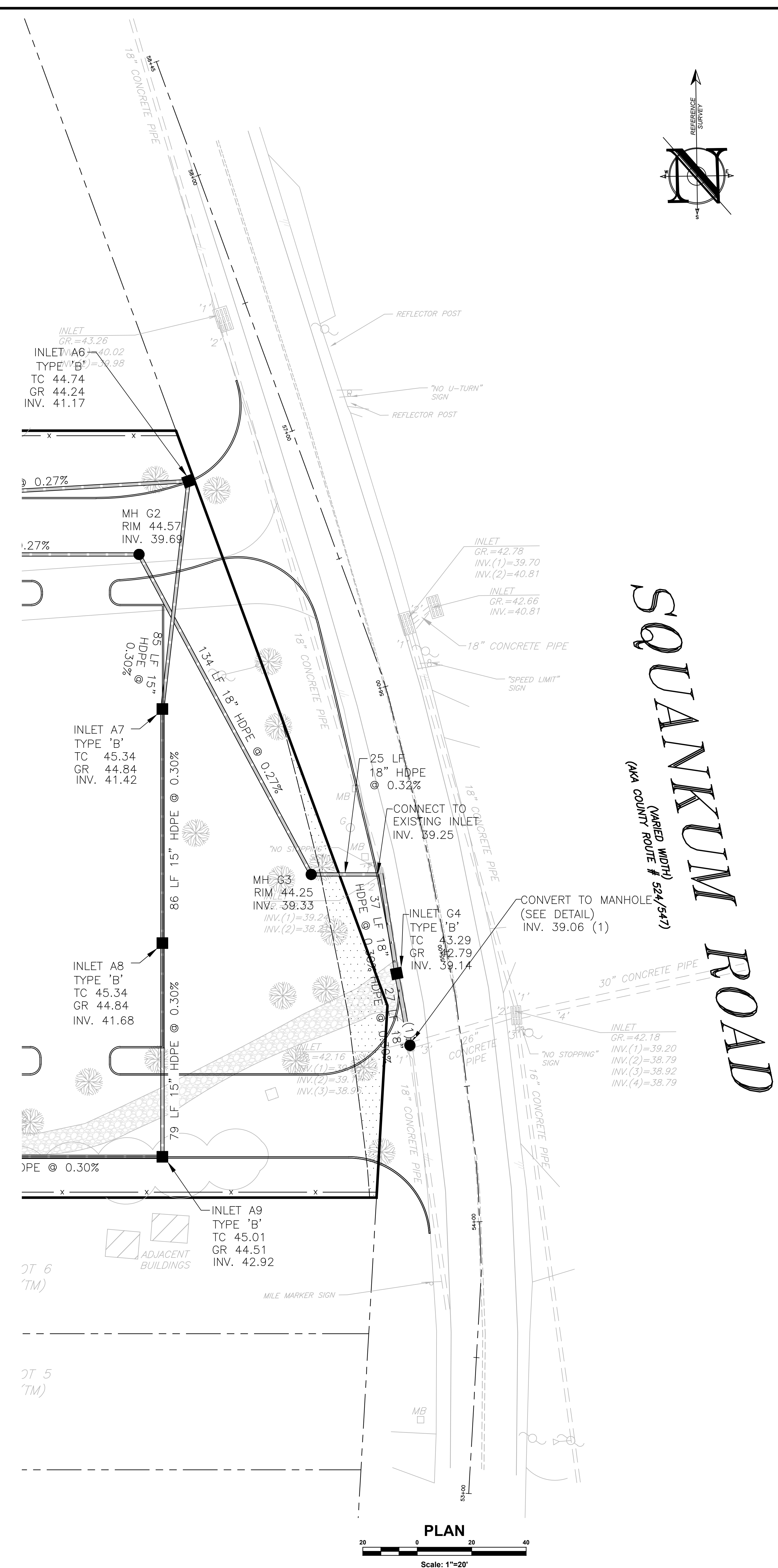
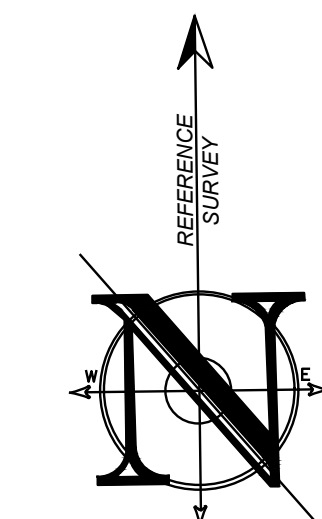
NOT FOR CONSTRUCTION, APPROVED BY: [Signature]

PLAN INFORMATION

PRELIMINARY & FINAL MAJOR SITE PLAN

SHEET TITLE: COUNTY ROUTE STRIP PLAN

SHEET NO.: C501



- UTILITY NOTES: 1. ALL CONSTRUCTION SHALL CONFORM WITH ANY APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS... 2. ALL CONSTRUCTION IN ROADWAYS TO CONFORM TO THE TOWNSHIP OF HOWELL CONSTRUCTION GUIDELINES... 3. PIPE LENGTHS INDICATED ARE MEASURED CENTER TO CENTER OF EACH STRUCTURE...

LEGEND: Table with columns 'EXISTING' and 'PROPOSED' showing symbols for boundary lines, buildings, walls, gas, water, inlets, storm, sanitary main, sanitary lateral, overhead wire, electric, telephone, utility pole, hydrant, sign post, fence, light fixture, test pit location, grade flow arrow, swale center line.

File: N:\Projects\17-991-01 - 052 Inlet\17-991-01 - 052 Inlet.dwg, Date: 01/30/19, 2:58:00 PM, User: jlf, Plot: 17-991-01.dwg, Plot Date: 01/30/19, 2:58:00 PM, Plotter: HP DesignJet T1100e, Plot Scale: 1:1, Plot Range: All, Plot Orientation: Landscape, Plot Color: Black, Plot Lineweight: 0.20, Plot Linetype: Solid, Plot Font: Arial, Plot Font Size: 10, Plot Font Weight: Normal, Plot Font Style: Regular, Plot Font Color: Black, Plot Font Orientation: Horizontal, Plot Font Angle: 0, Plot Font Size (inches): 10/36, Plot Font Weight (inches): Normal, Plot Font Style (inches): Regular, Plot Font Color (inches): Black, Plot Font Orientation (inches): Horizontal, Plot Font Angle (inches): 0, Plot Font Size (centimeters): 25.4, Plot Font Weight (centimeters): Normal, Plot Font Style (centimeters): Regular, Plot Font Color (centimeters): Black, Plot Font Orientation (centimeters): Horizontal, Plot Font Angle (centimeters): 0

PROJECT NAME: 289 SQUANKUM ROAD

PROJECT LOCATION: BLOCK 49, LOT 7 289 SQUANKUM ROAD

OWNER: SMITH FAMILY PROPERTIES, LLC

APPLICANT: SMITH FAMILY PROPERTIES, LLC

APPLICANT'S PROFESSIONALS: ATTORNEY: THE ACCESSORY LAW OFFICES

ARCHITECT: PARALLEL ARCHITECTURAL GROUP

SURVEYOR: CLEARPOINT SERVICES LLC



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UTILITY LIST: GAS, WATER, SANITARY MAIN, ELEC. WIRE

INSITE Engineering, LLC CERTIFICATE OF AUTHORIZATION: 246A28083200

LICENSED IN: NEW JERSEY, NEW YORK, PENNSYLVANIA

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Signature: Jason L. Fichter, P.E., P.P., C.F.M., C.M.E.

REVISIONS table with columns: No., Date, Description

APPROVED BY: FOR CONSTRUCTION

PLAN INFORMATION: PRELIMINARY & FINAL MAJOR SITE PLAN

LANDSCAPE PLAN

Scale: AS SHOWN

Date: 01/30/19

Job #: 17-991-01

Scale: AS SHOWN

Date: 01/30/19

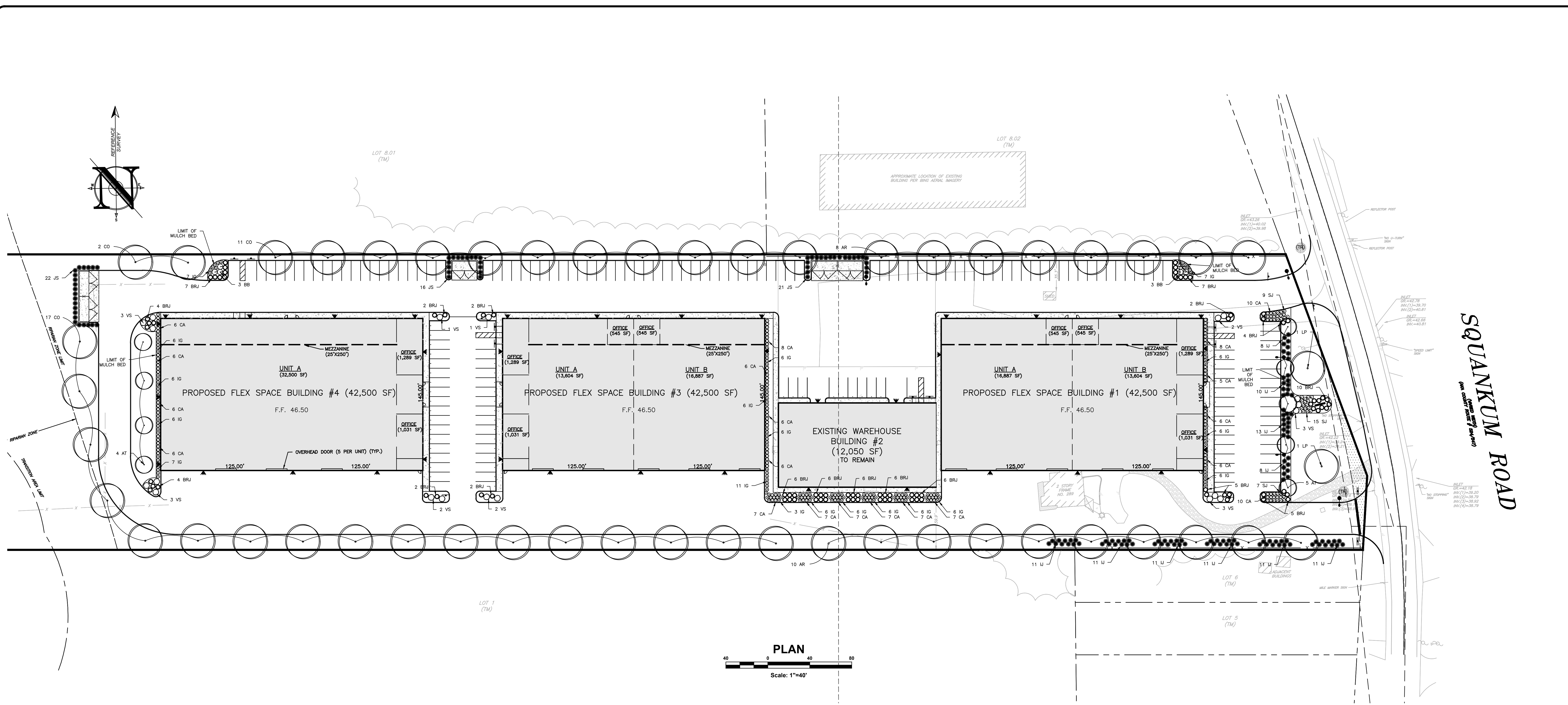
Job #: 17-991-01

Scale: AS SHOWN

Date: 01/30/19

Job #: 17-991-01

Scale: AS SHOWN



PLAN Scale: 1"=40'

GENERAL LANDSCAPE/PLANTING NOTES

- 1. THIS PLAN IS TO BE USED FOR LANDSCAPE INSTALLATION PURPOSES ONLY. EXAMINE ALL ENGINEERING DRAWINGS AND FIELD CONDITIONS FOR SPECIFIC LOCATIONS OF UTILITIES AND STRUCTURES.

LANDSCAPE MAINTENANCE CHECKLIST

- TREES, SHRUBS AND GROUNDCOVERS 1. PRUNE TREES TO REMOVE DEAD AND DISEASED WOOD AND TO IMPROVE OVERALL HABIT.

SEEDING NOTES

- 1. ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED, SHALL BE PLANTED AS LAWN.

PROPOSED PLANT SCHEDULE

Table with columns: KEY, QTY, LATIN NAME, COMMON NAME, SIZE, NOTES. Lists plants like ACER TATARICUM, CELTIS OCCIDENTALIS, JUNIPERUS VIRGINIANA.

Vertical text on the left margin: File: N:\Projects\2017-991-01 - 289 Squankum Road (Final) (17-991-01) - 289 Squankum Road (Final) (17-991-01) - Landscape & Lighting.dwg, Date: 01/30/19, 11:58 AM, User: jlf

# 289 SQUANKUM ROAD

PROJECT LOCATION  
BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

OWNER  
**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

ARCHITECT  
**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

ATTORNEY  
**THE ACCIANO LAW OFFICES**  
FRANCIS C. ACCIANO, ESQUIRE  
80 WEST MAIN STREET  
FREEHOLD, NJ 07728

ARCHITECT  
**PARALLEL ARCHITECTURAL GROUP**  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

SURVEYOR  
**CLEARPOINT SERVICES LLC**  
1105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527



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NJ ONE CALL 800-272-1900  
(In NJ 2 Day prior to excavation)

ELECTRIC: RED  
GAS: YELLOW  
COMMUN. UTILITY: PURPLE  
SEWER: BLUE  
TEMP. SENS. WALKWAY: GREEN  
NEAREST EX. UTILITY: WHITE



INSITE Engineering, LLC  
CERTIFICATE OF AUTHORIZATION: 246A28083200  
1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08738  
732-537-1100 (PH) 732-537-7244 (FAX)  
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NJPE #1118 NJPP #728 PAPE #1968  
NCPPE #817 NJPE #02295 CTE #23291  
NCPPE #3336 DCPE #00682 COPE #6605

REVISIONS

REV #	DATE	DESCRIPTION
1	01/30/19	REVISION PHASING
2	03/12/19	REV. PER COUNTY COMMENTS
3	03/12/19	REV. PER TOWNSHIP COMMENTS
4	03/20/19	REV. PER COUNTY COMMENTS
5	03/20/19	REV. PER TOWNSHIP COMMENTS
6	03/20/19	INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC

DATE: 01/30/19 DRAWN BY: LBC

JOB #: 17-991-01 CHECKED BY: JLF

CAD ID: 17-991-01\_01

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APPROVED BY:

PLAN INFORMATION

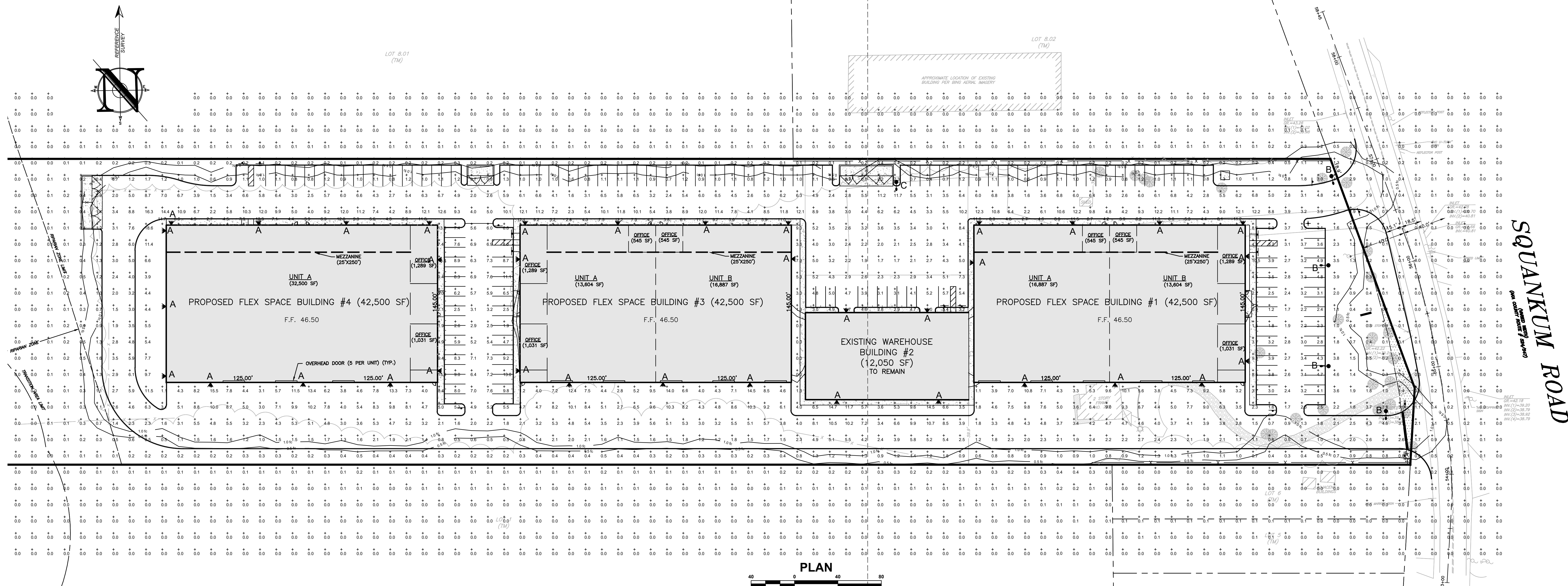
PRELIMINARY & FINAL MAJOR SITE PLAN

SHEET TITLE:

**LIGHTING PLAN**

SHEET NO.:

**C601**



PLAN  
Scale: 1"=40'

**LEGEND**

EXISTING	PROPOSED
BOUNDARY LINE	BOUNDARY LINE
CONTOUR LINE	CONTOUR LINE
SPOT ELEVATION	SPOT ELEVATION
BUILDING	BUILDING
WALL	WALL
GAS	GAS
WATER	WATER
INLET	INLET
STORM	STORM
SANITARY MAIN	SANITARY MAIN
SANITARY LATERAL	SANITARY LATERAL
OVERHEAD WIRE	OVERHEAD WIRE
ELECTRIC	ELECTRIC
TELEPHONE	TELEPHONE
UTILITY POLE	UTILITY POLE
HYDRANT	HYDRANT
SIGN POST	SIGN POST
FENCE	FENCE
LIGHT FIXTURE	LIGHT FIXTURE
TEST PIT LOCATION	TEST PIT LOCATION
GRADE FLOW ARROW	GRADE FLOW ARROW
SWALE CENTER LINE	SWALE CENTER LINE

**LUMINAIRE SCHEDULE**

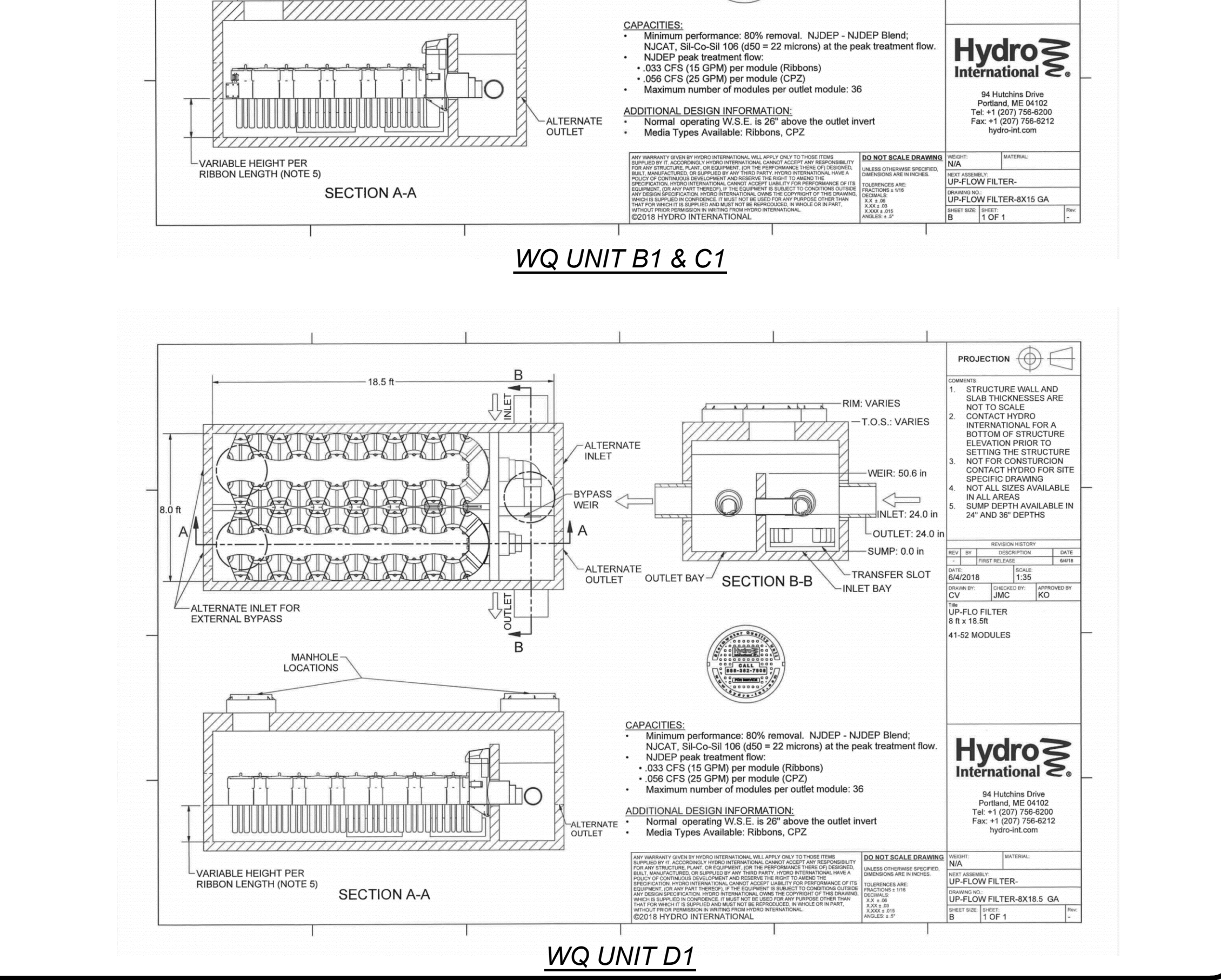
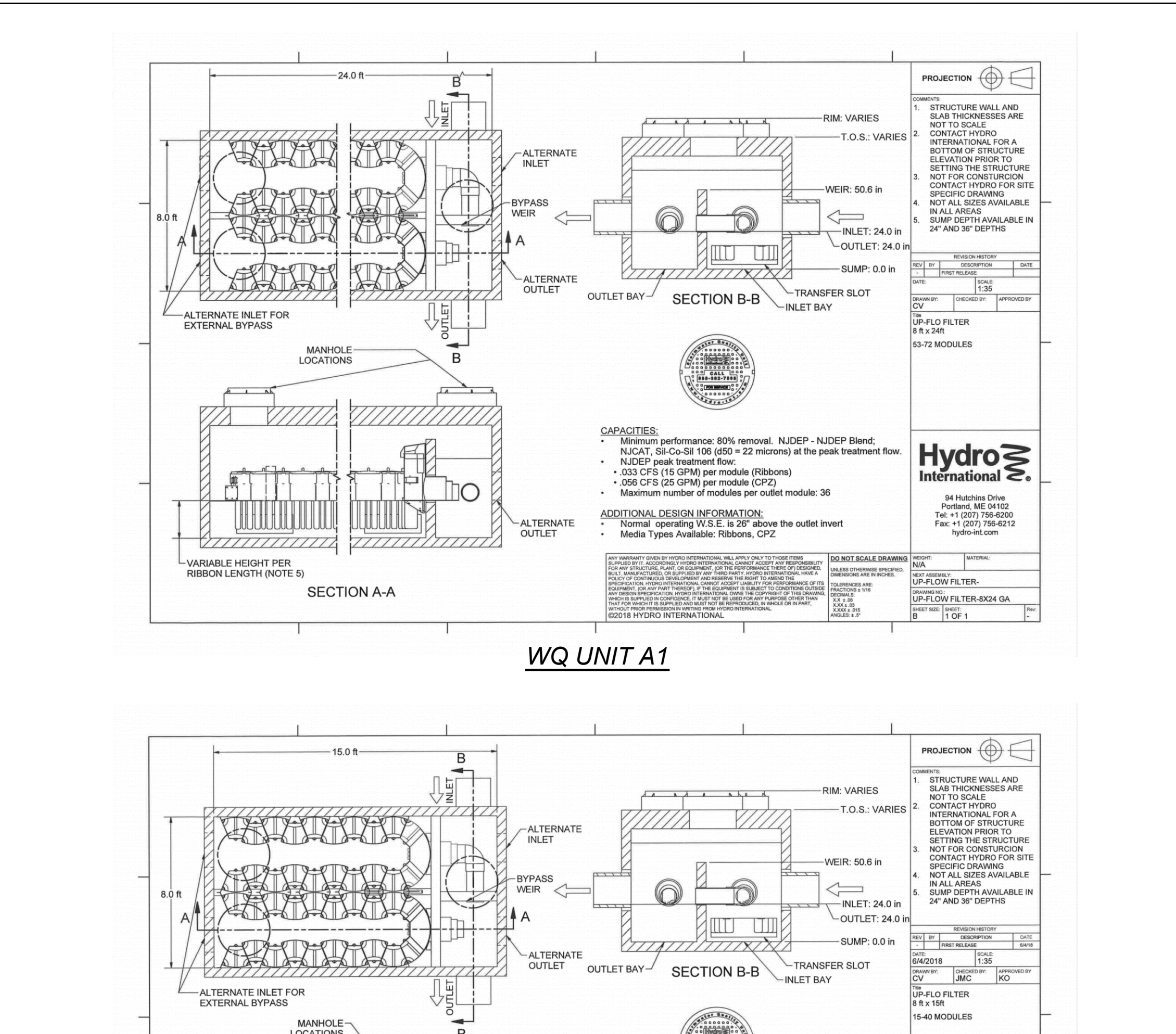
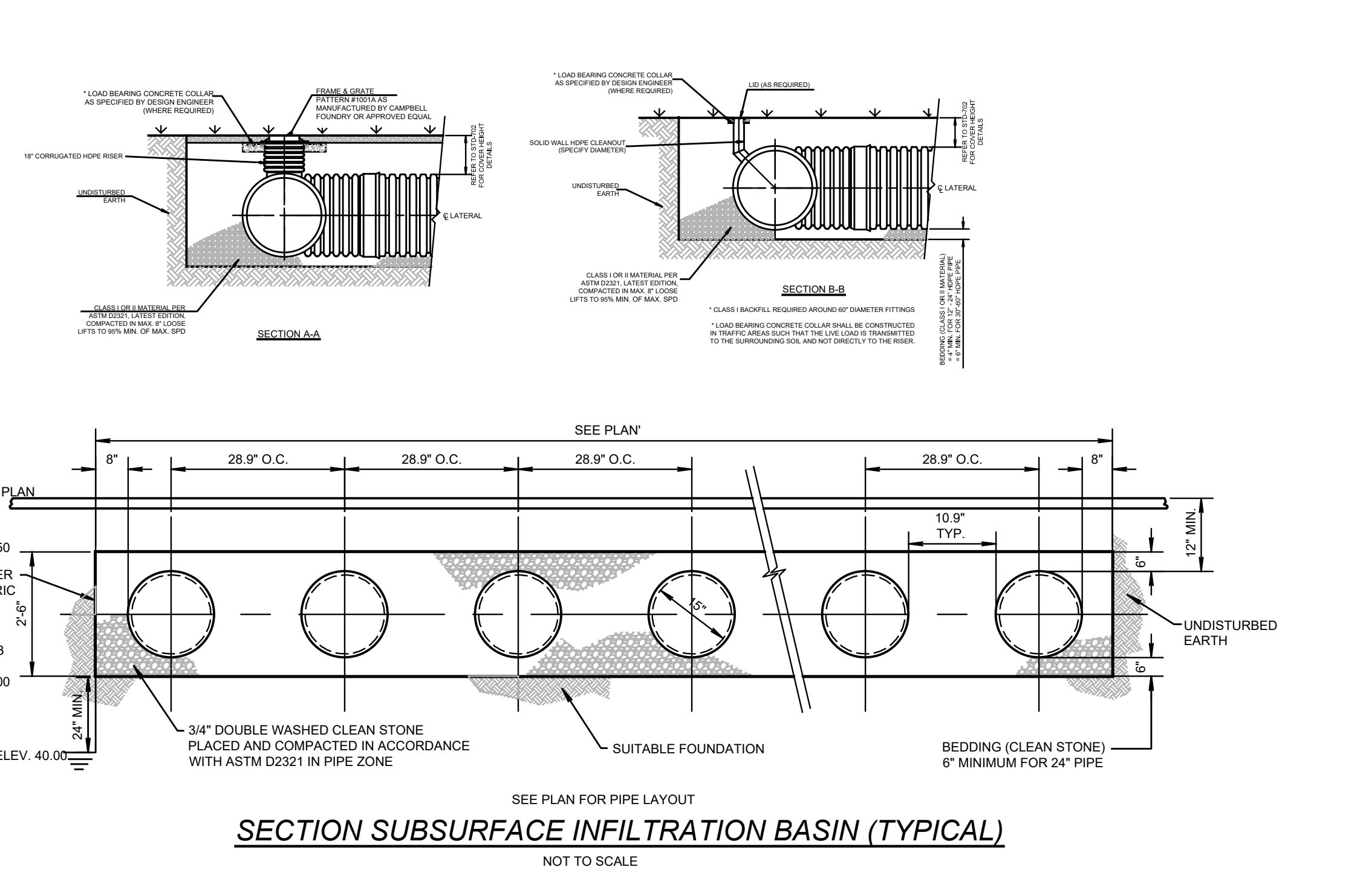
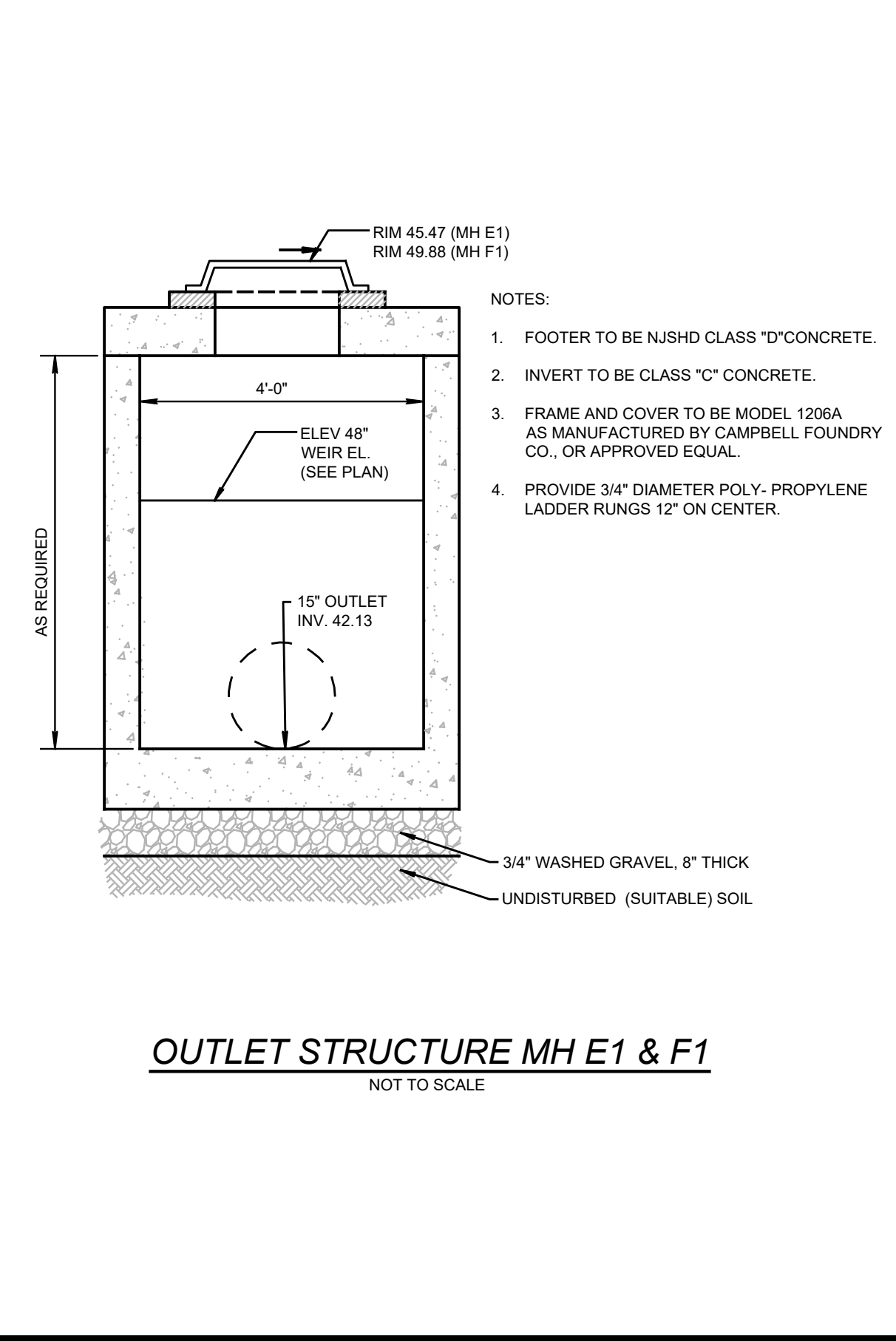
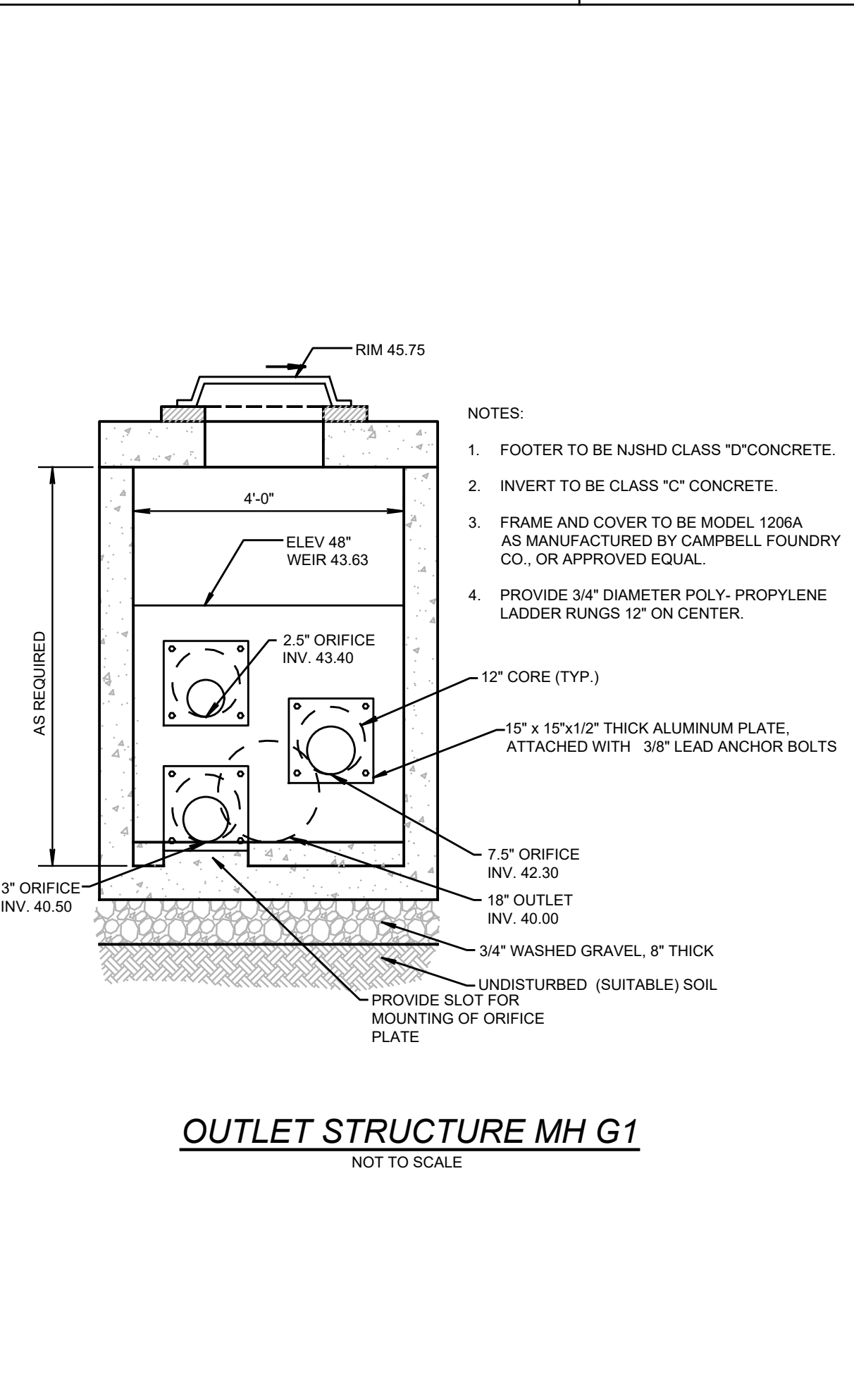
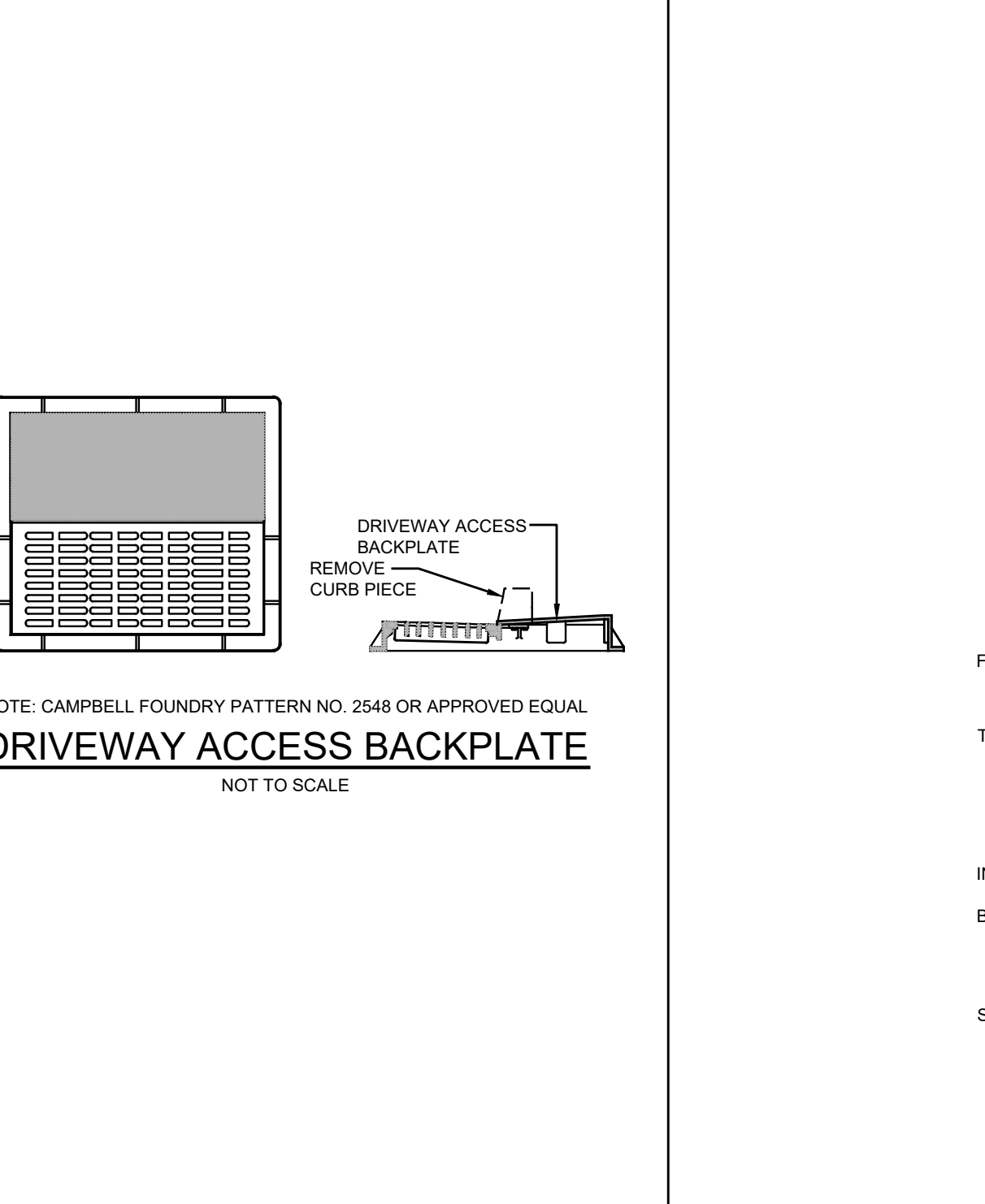
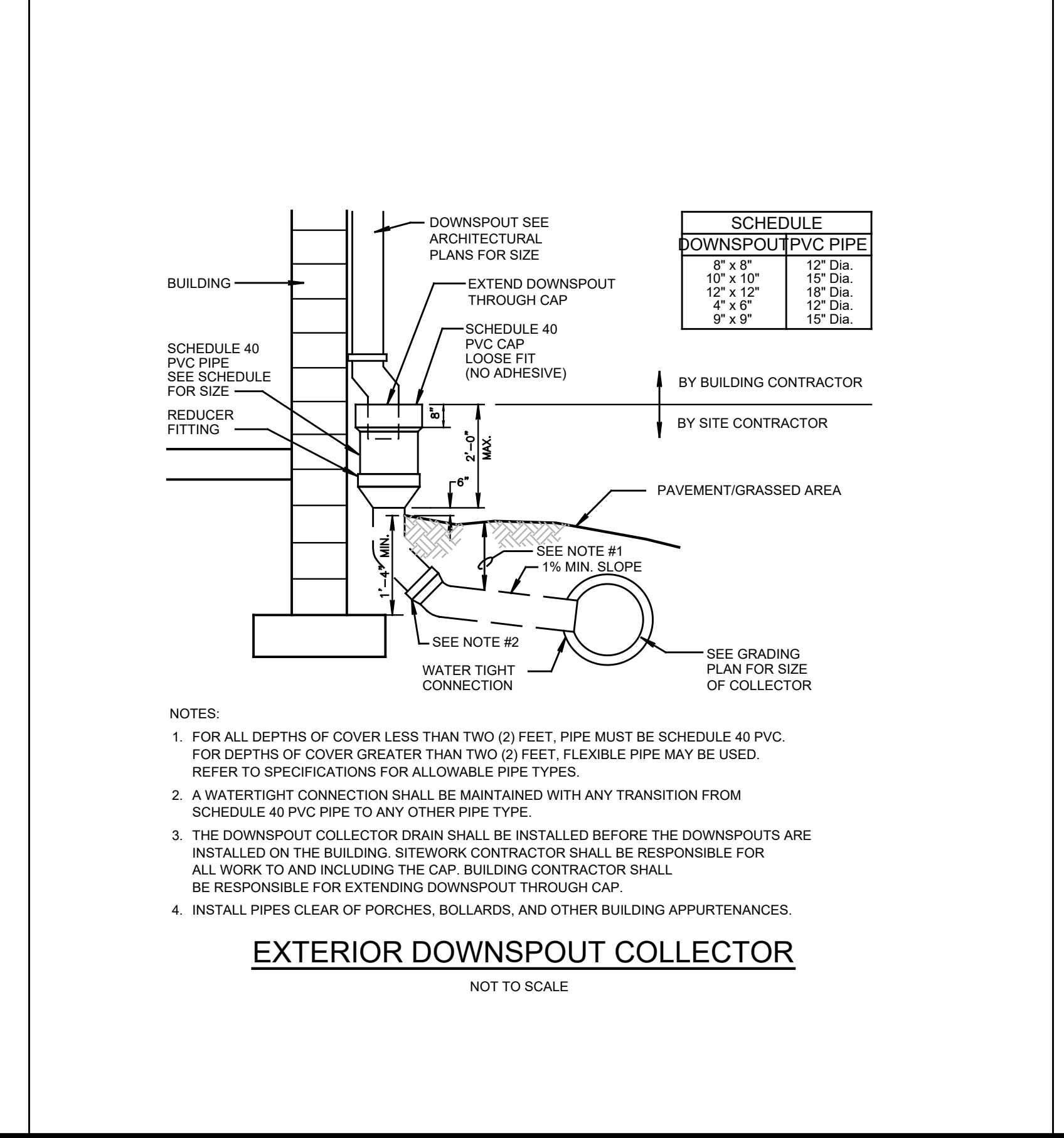
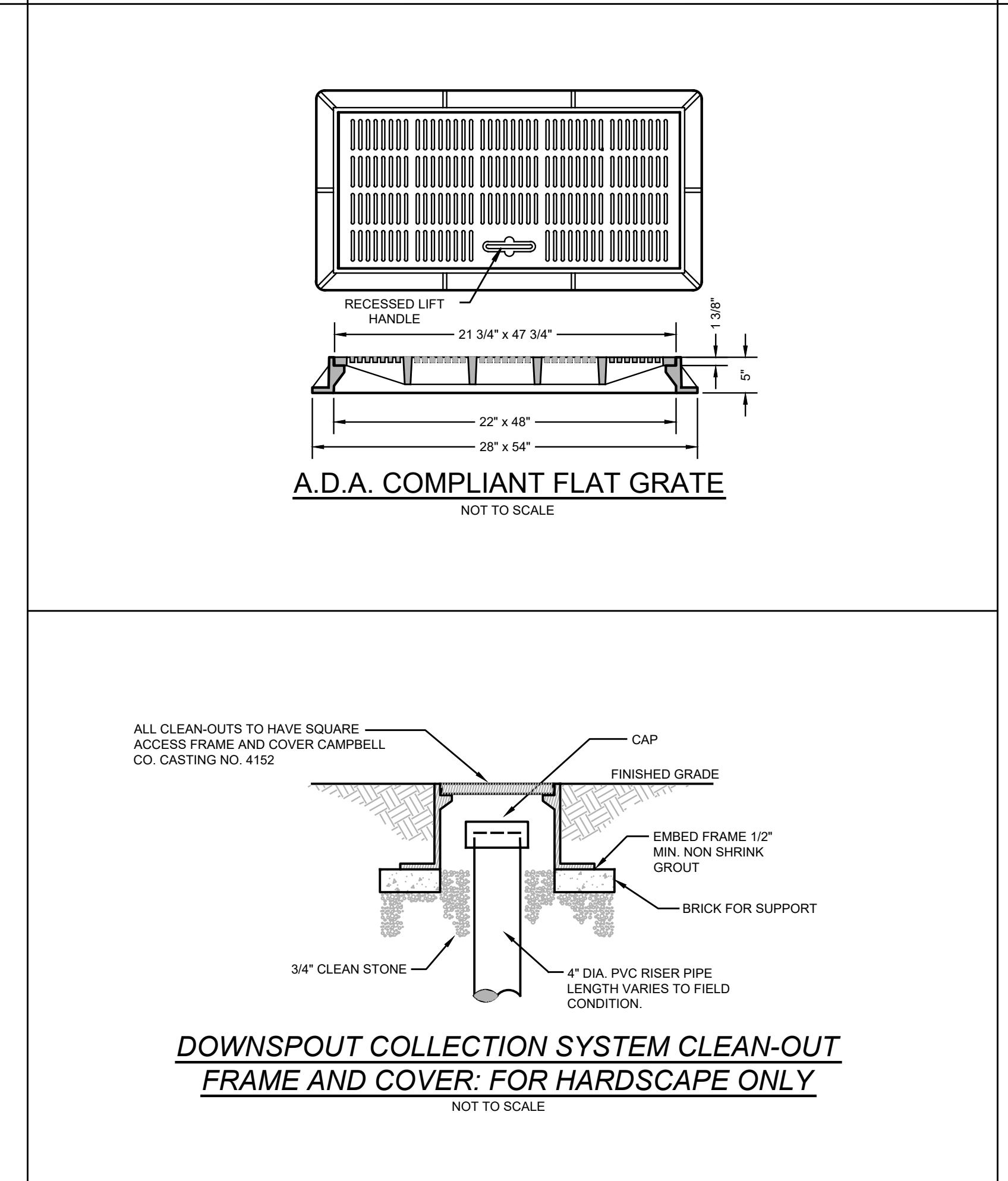
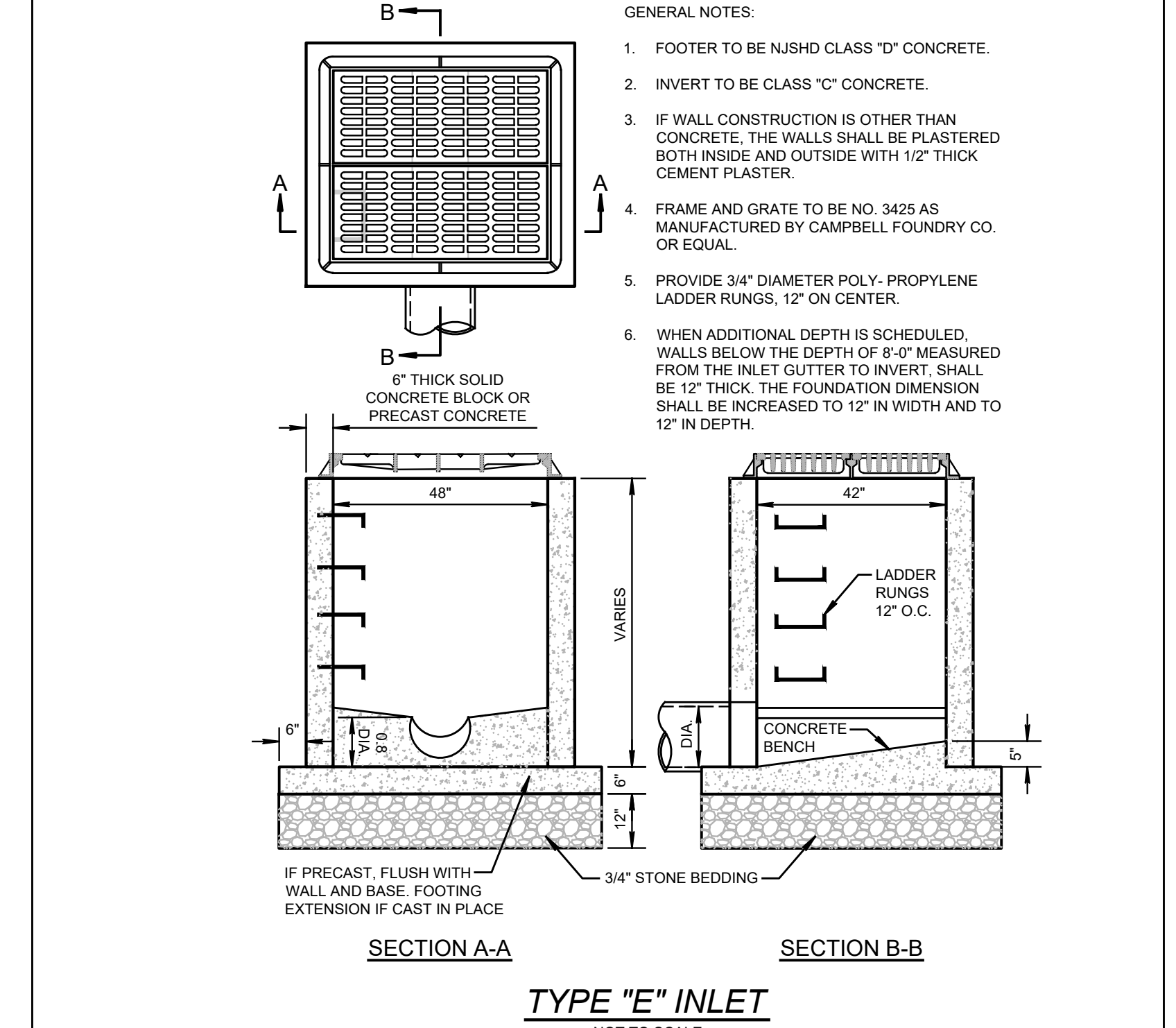
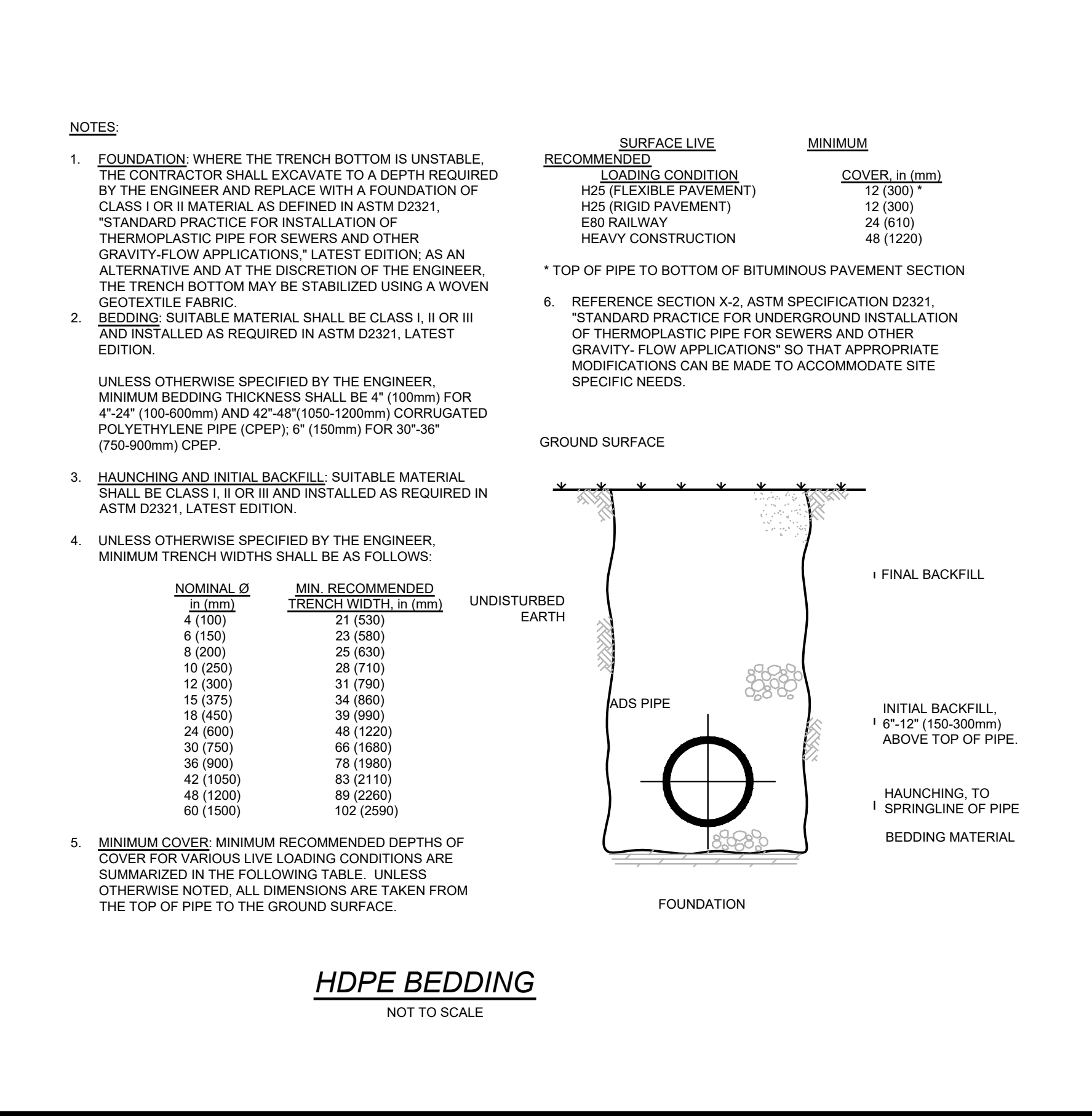
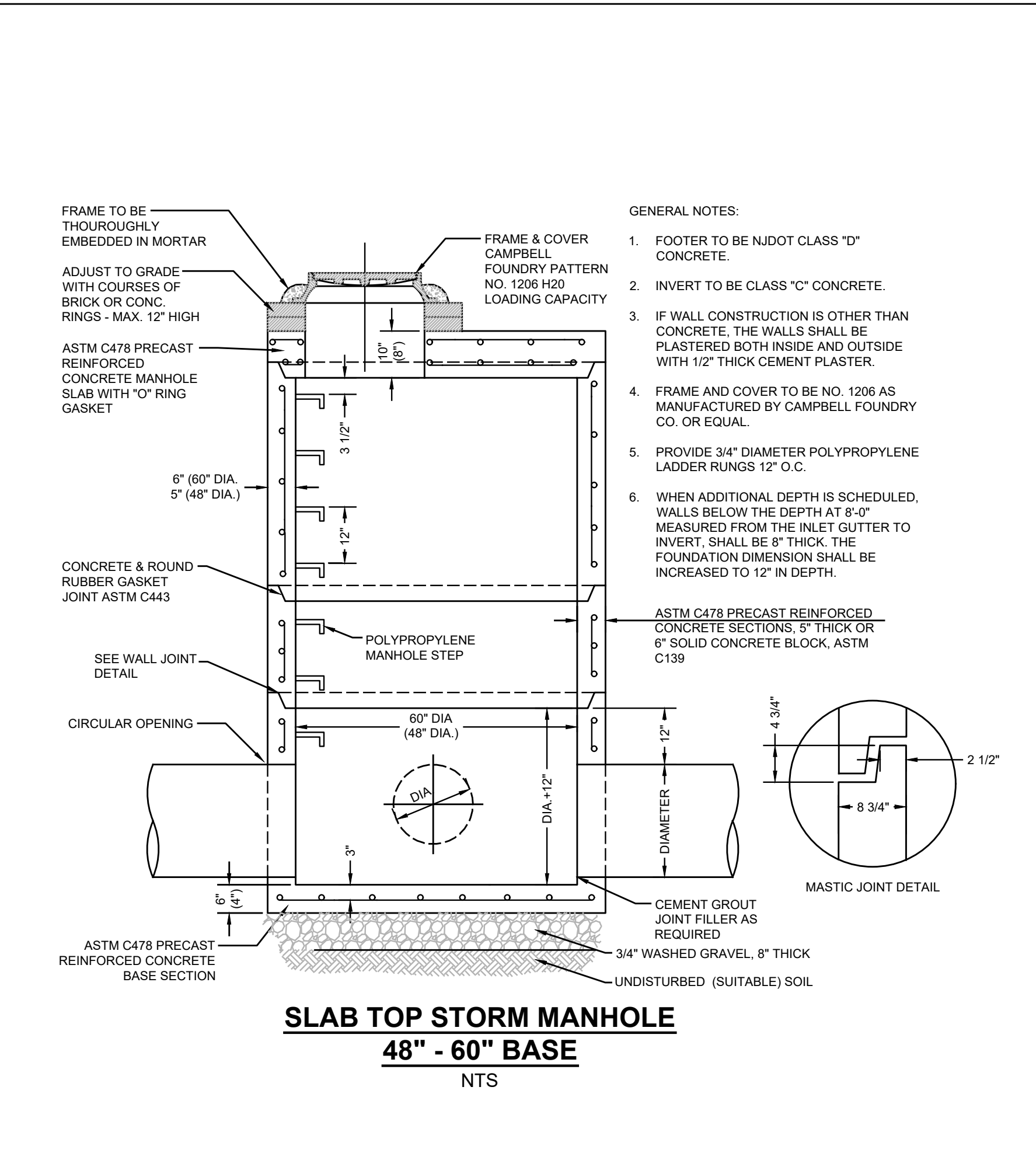
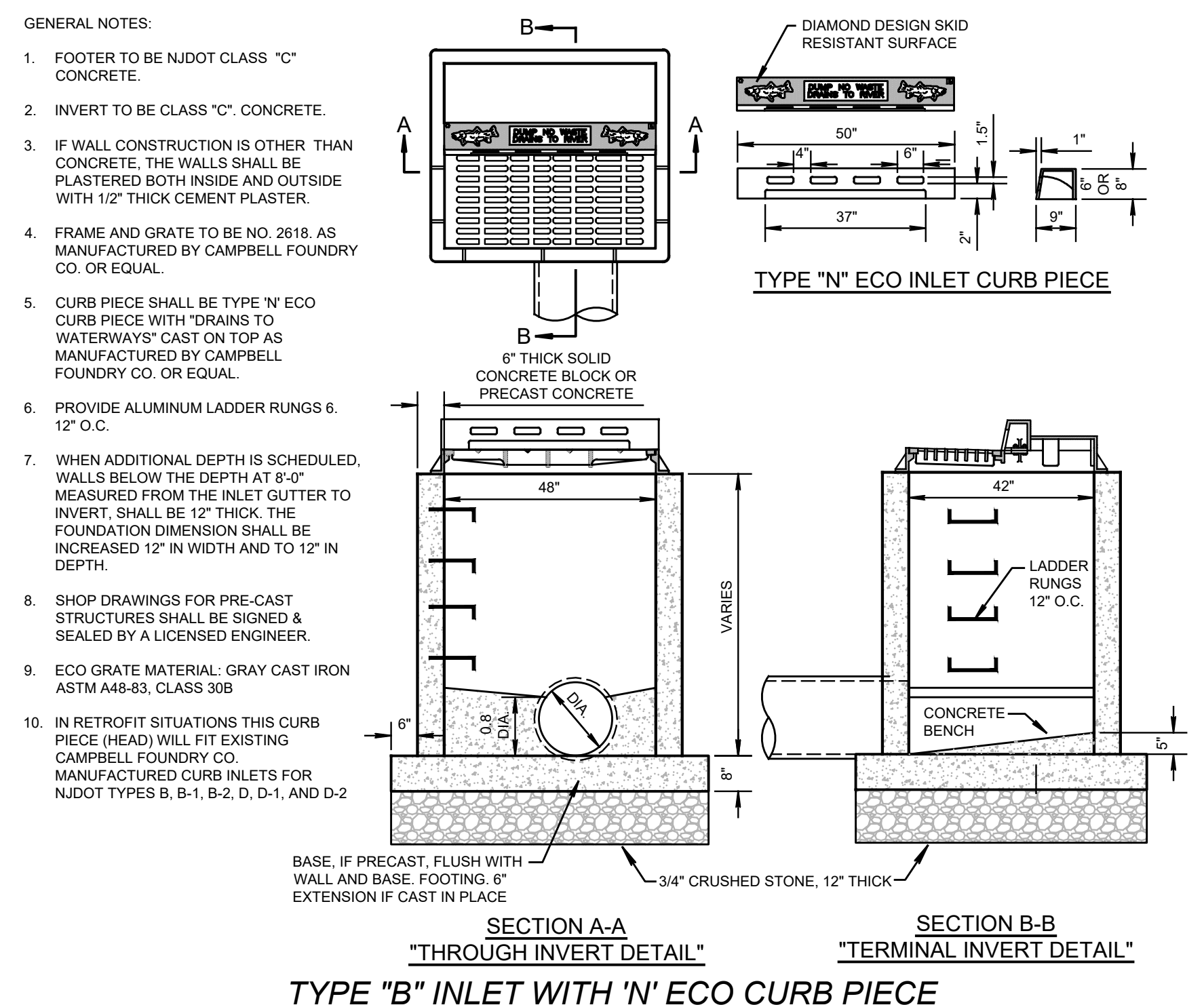
LABEL	QTY	DESCRIPTION	CATALOG NUMBER	WATTAGE	LAYOUT	MOUNT HEIGHT	TYPE	DIRECTION
A	36	DSX2 LED WITH 80 LEDS @ 1200 MA, 4000K, TYPE FORWARD THROW MEDIUM OPTICS	DSX2 LED 80C 1200 40K 1P 1M MVOLT	322 WATT	SINGLE	18"	WALL	DOWN
B	4	DSX1 LED WITH 40 LEDS @ 1000 MA, 4000K, TYPE 3 MEDIUM OPTICS	DSX1 LED 40C 1000 40K 1M MVOLT	138 WATT	SINGLE	18"	AREA	DOWN
C	1	DSX2 LED WITH 80 LEDS @ 1200 MA, 4000K, TYPE 4 MEDIUM OPTICS (H8 SHIELD)	DSX2 LED 80C 1200 40K 1M MVOLT HS	322 WATT	SINGLE	18"	AREA	DOWN

NOTE:  
1. LIGHTING TEMPLATE VALUES SHOWN ARE: 1.00 AND 0.50 FOOTCANDLES.  
2. ALL LIGHTS TO REMAIN ON DURING OPERATING HOURS.  
3. SECURITY LIGHTING TO REMAIN ON FROM DUSK TO DAWN.

File: N:\Projects\2017-01-01-289 Squankum Road (Howell, NJ)\17-991-01-01-289 Squankum Road (Howell, NJ)\17-991-01-01-289 Squankum Road (Howell, NJ)\Lighting.dwg - 0801 Lighting Plan  
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**PROJECT INFORMATION**

PROJECT NAME: **289 SQUANKUM ROAD**

PROJECT LOCATION: BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

OWNER: **SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT: **SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

ATTORNEY: **THE ACCIANO LAW OFFICES**  
FRANCIS C. ACCIANO, ESQUIRE  
80 WEST MAIN STREET  
FREEHOLD, NJ 07728

ARCHITECT: **PARALLEL ARCHITECTURAL GROUP**  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

SURVEYOR: **CLEARPOINT SERVICES LLC**  
2105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527

**IN SITE ENGINEERING, LLC**  
SINCE 2003

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(NJ One Call is not responsible for the accuracy of the information provided.)

**IN SITE ENGINEERING, LLC**  
CERTIFICATE OF AUTHORIZATION: 24GA28083200  
1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08738  
732-537-7100 (PH) 732-537-7244 (FAX)  
info@inSiteEng.net www.inSiteEng.net

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**Jason L. Fichter, P.E., P.P., C.F.M., C.M.E.**  
NJPE #1118 NJPP #728 PAPE #1968  
DCPE 3813 WJPE 90236 CTFE 23291  
NCE 33336 DCPE 900882 COPE 36603

**REVISIONS**

REV	NO.	DATE	DESCRIPTION
1	1	01/30/19	ISSUED FOR PERMITS
2	12/14/21	REVISED PHASING	
3	03/15/23	REV PER TOWNSHIP COMMENTS	
4	03/07/23	REV PER TOWNSHIP COMMENTS	
5	01/30/23	INITIAL RELEASE	

SCALE: **AS SHOWN** DESIGNED BY: **DDC**

DATE: **01/30/19** DRAWN BY: **LBC**

JOB #: **17-991-01** CHECKED BY: **JLF**

CAID #: **17-991-01\_0**

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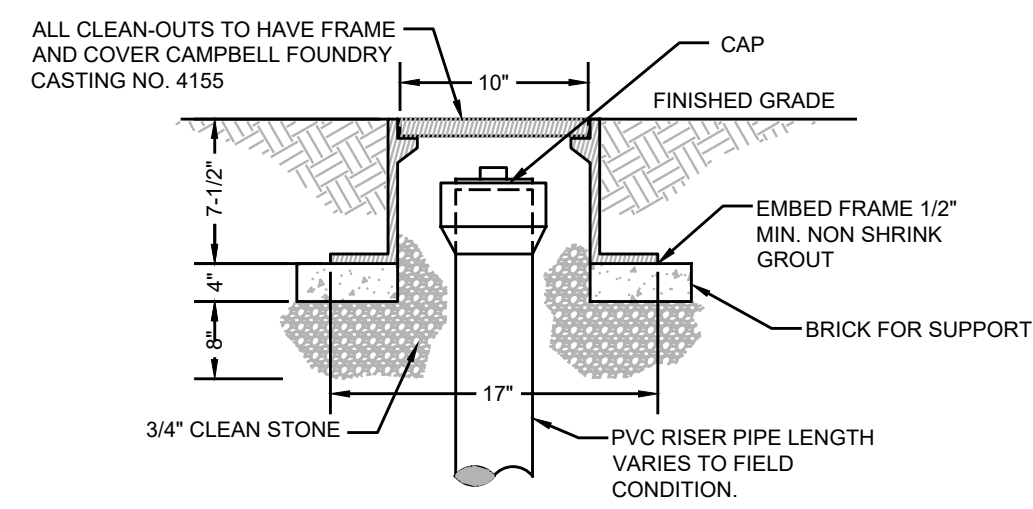
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**PLAN INFORMATION**

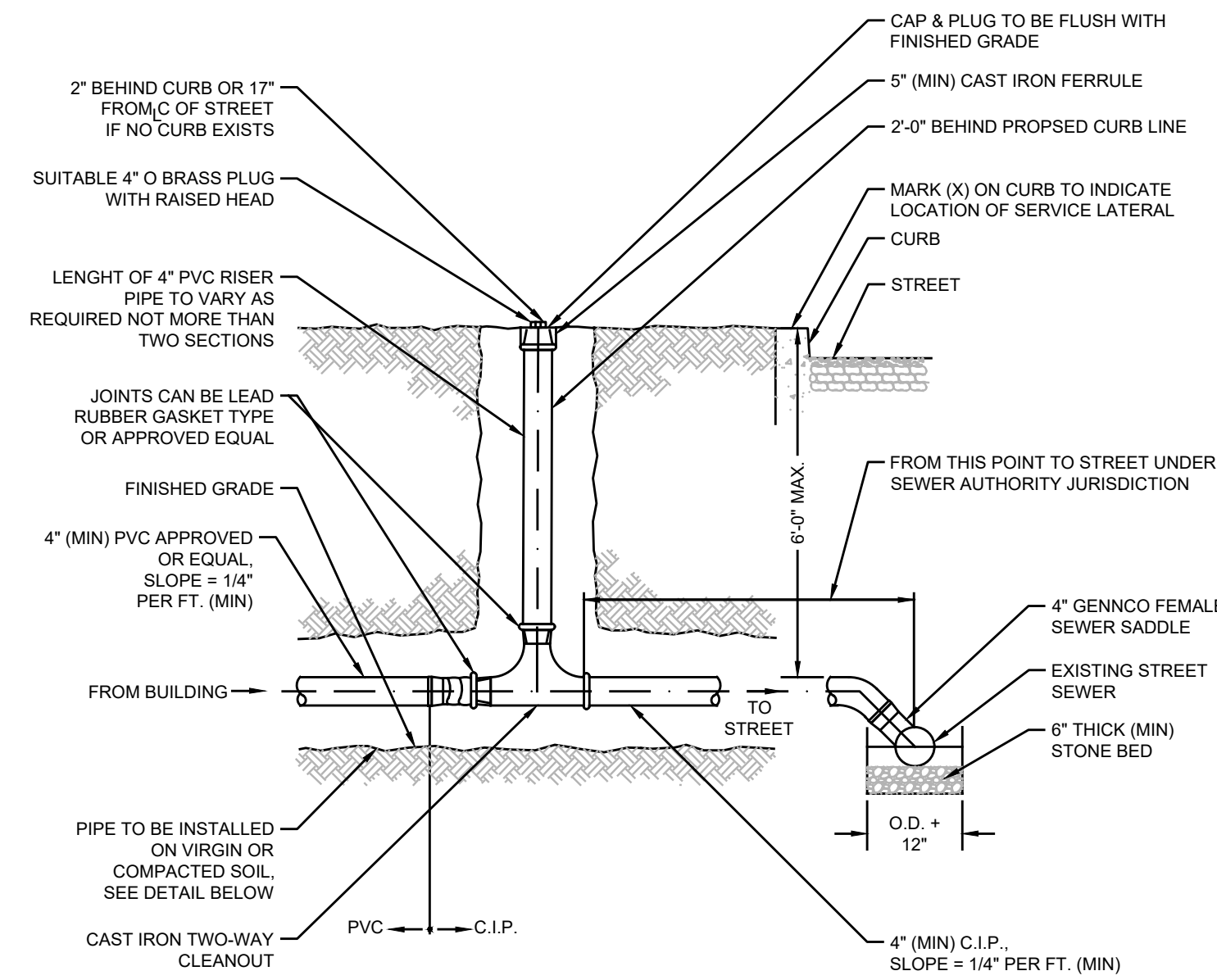
DRAWING TITLE: **PRELIMINARY & FINAL MAJOR SITE PLAN**

SHEET TITLE: **CONSTRUCTION DETAILS**

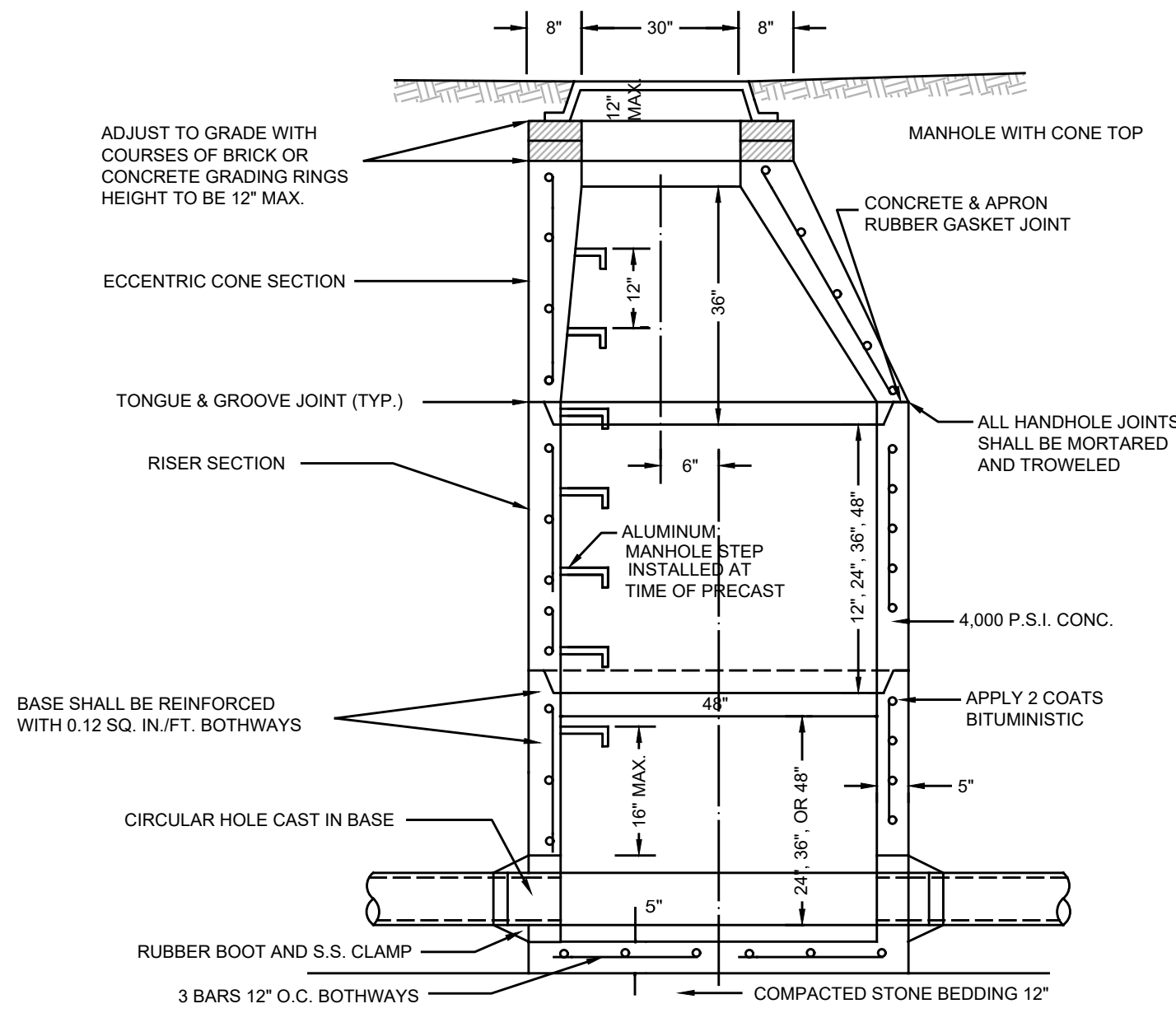
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**SANITARY CLEAN-OUT  
FRAME AND COVER**  
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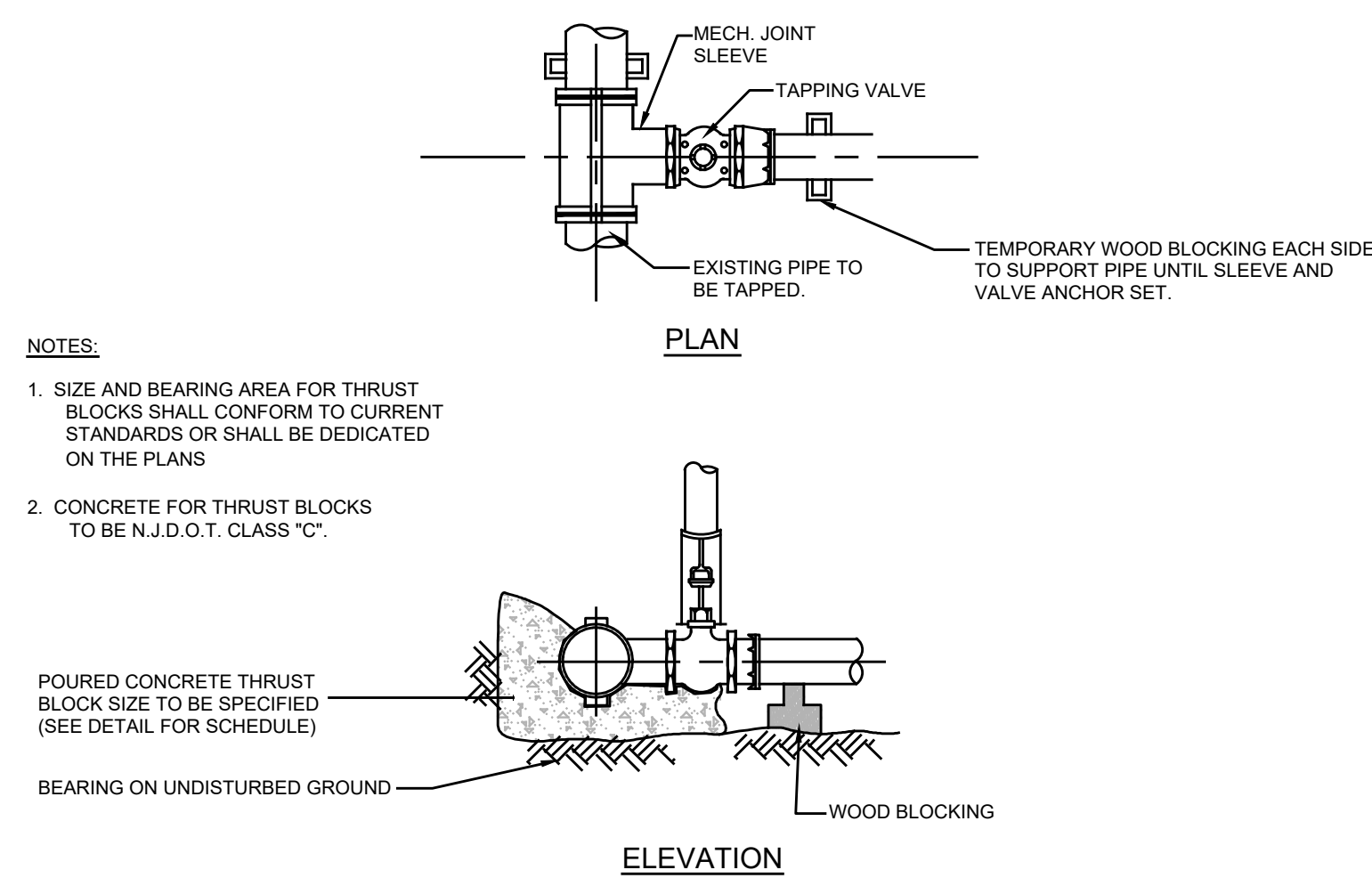


**SANITARY SEWER LATERAL CONNECTION**  
N.T.S.



**SANITARY PRECAST REINFORCED  
CONCRETE MANHOLE ASSEMBLY**  
NOT TO SCALE

**SANITARY SYSTEM DETAILS**



**TAPPING VALVE AND SLEEVE ASSEMBLY  
WET TAP ASSEMBLY**  
NTS

NOTE: THE CONTRACTOR SHALL FURNISH AND INSTALL TAPPING SLEEVES WITH COMPATIBLE TAPPING VALVES.

**WATER SERVICE DETAILS**

**PROJECT INFORMATION**

PROJECT NAME:

**289  
SQUANKUM  
ROAD**

PROJECT LOCATION:  
BLOCK 49, LOT 7  
289 SQUANKUM ROAD  
TOWNSHIP OF HOWELL  
MONMOUTH COUNTY, NJ

OWNER:  
**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

APPLICANT:  
**SMITH FAMILY PROPERTIES, LLC**  
P.O. BOX 625  
FARMINGDALE, NJ 07727

**APPLICANT'S PROFESSIONALS**

ATTORNEY:  
**THE ACCIANO LAW OFFICES**  
FRANCIS C. ACCIANO, ESQUIRE  
80 WEST MAIN STREET  
FREEHOLD, NJ 07728

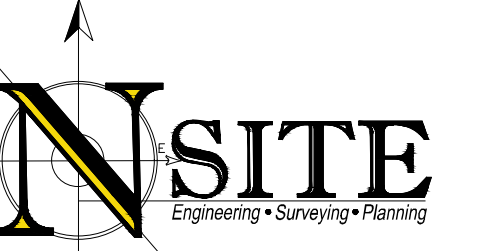
ARCHITECT:  
**PARALLEL ARCHITECTURAL GROUP**  
494 BROADWAY, SUITE 3  
LONG BRANCH, NJ 07740

SURVEYOR:  
**CLEARPOINT SERVICES LLC**  
2105 W. COUNTY LINE ROAD, SUITE B  
JACKSON, NJ 08527



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(NJ One Call is a service)

LETTER	RED
LINE OR	BROWN
COMMON-LAYER, TV	ORANGE
SEWER	GREEN
TEMP. SURVEY MARKERS	MAGENTA
PROPOSED EXIST. VEINS	WHITE



INSITE Engineering, LLC  
CERTIFICATE OF AUTHORIZATION: 246A28083200  
1913 ATLANTIC AVE., SUITE #4, WALL, NJ 08738  
732-537-7100 (PH) 732-537-7244 (FAX)  
insite@insiteeng.net www.insiteeng.net

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*Jason L. Fichter*  
**JASON L. FICHTER, PE, PP, CFM, CME**  
NJPE 33318 NJPPP #238 PAPE #1988  
DEPE 3813 NYPE 90235 CTPE 23291  
NCEP 33336 DDCPE 900882 COPE 36603

**REVISIONS**

Rev	NO	DATE	DESCRIPTION
4	12/14/21		REVISED PHASING
3	08/10/21		REV. PER COUNTY COMMENTS
2	03/11/20		REV. PER TOWNSHIP COMMENTS
1	01/30/19		REV. PER TOWNSHIP COMMENTS
0	01/30/19		INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC

DATE: 01/30/19 DRAWN BY: LBC

JOB #: 17-991-01 CHECKED BY: JLF

CAD ID: 17-991-01\_00

NOT FOR CONSTRUCTION

APPROVED BY:

FOR CONSTRUCTION

PLAN INFORMATION

PRELIMINARY & FINAL  
MAJOR SITE PLAN

SHEET TITLE:  
**CONSTRUCTION  
DETAILS**

SHEET NO.:  
**C802**

C802

### SOIL EROSION AND SEDIMENT CONTROL NOTES

1. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH IN VALLEYS AND AT CRESTS OF BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
  2. USE ONE OF THE FOLLOWING:
    - a. ENHANCED ASPHALT - (85-1 C85+1 C85-2 R82-1 R81-2 C85-1 AND C85-2) APPLY 4.0 GALLONS YD OR 94 GALLONS FLAT. SLOPES LESS THAN 4% HIGH ON SLOPES 8 FEET OR MORE HIGH USE 0.75 GALLONS YD OR 363 GALLONS AC.
    - b. ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS VEGETABLE BASED GELS SHALL BE APPLIED AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER.
    - c. SYNTHETIC OR ORGANIC BINDERS - BINDERS SUCH AS CURBANE, DCA-30, PENTRO-ACK MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS.
- NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE PRODUCTS TO THE EXCLUSION OF OTHER PRODUCTS.

### PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION

1. SITE PREPARATION
  - a. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDING PREPARATION. STEEP SLOPES SHOULD BE STABILIZED WITH MULCH ONLY. GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARD FOR LAND GRADING.
  - b. IMMEDIATELY PRIOR TO SEEDING AND MULCH APPLICATION, THE SUBSOIL SHALL BE EVALUATED FOR COMPACTION IN ACCORDANCE WITH THE STANDARD FOR LAND GRADING.
  - c. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING THE SOIL STRUCTURE. A UNIFORM APPLICATION TO A DEPTH OF 5 INCHES (UNSETTLED) IS REQUIRED ON ALL SITES. TOPSOIL SHALL BE AMENDED WITH ORGANIC MATTER, AS NEEDED, IN ACCORDANCE WITH THE STANDARD FOR TOPSOILING.
2. NEEDED PREPARATION
  - a. UNIFORMLY APPLY GROUND LIMESTONE AND FERTILIZER TO TOPSOIL WHICH HAS BEEN SPREAD AND FIRMED, ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION SOIL SAMPLE MAPLERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICE QUANTITATIVELY.
  - b. FERTILIZER SHALL BE APPLIED AT THE RATE OF 50 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. LIME RATES SHALL BE ESTABLISHED VIA SOIL TESTING. CALCULATE RATES TO BE EQUIVALENT TO STANDARDS FOR MEASURING THE ABILITY OF LIME MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
  - c. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR, CONTRARY TILLAGE UNTIL A REASONABLE UNIFORM SEED BED IS PREPARED.
  - d. INJECT SEEDS JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
  - e. SOILS HIGH IN SULPHUR OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.

### TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION

1. SITE PREPARATION
  - a. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDING PREPARATION. SEEDING MULCH APPLICATION, AND MULCH ANCHORING. ALL GRADING SHOULD BE DONE IN ACCORDANCE WITH STANDARDS FOR LAND GRADING, PG. 19-1.
  - b. INSTALL NEEDED EROSION CONTROL PRACTICES OR FACILITIES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENT BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.
  - c. IMMEDIATELY PRIOR TO SEEDING, THE SURFACE SHOULD BE SCARIFIED TO 12" WHERE THERE HAS BEEN SOIL COMPACTION. THIS PRACTICE IS PERMISSIBLE ONLY WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.).
2. SEEDING PREPARATION
  - a. APPLY 5 GROUND LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST RECOMMENDATIONS SUCH AS OFFERED BY RUTGERS CO-OPERATIVE EXTENSION. SOIL SAMPLE MAPLERS ARE AVAILABLE FROM THE LOCAL RUTGERS COOPERATIVE EXTENSION OFFICES. FERTILIZER SHALL BE APPLIED AT THE RATE OF 50 POUNDS PER ACRE OR 11 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT WITH 50% WATER INSOLUBLE NITROGEN UNLESS A SOIL TEST INDICATES OTHERWISE. LIME RATES SHALL BE ESTABLISHED VIA SOIL TESTING. CALCULATE RATES TO BE EQUIVALENT TO STANDARDS FOR MEASURING THE ABILITY OF LIME MATERIALS TO NEUTRALIZE SOIL ACIDITY AND SUPPLY CALCIUM AND MAGNESIUM TO GRASSES AND LEGUMES.
  - b. WORK LIME AND FERTILIZER INTO THE SOIL AS NEARLY AS PRACTICAL TO A DEPTH OF 4 INCHES WITH A DISC, SPRINGTOOTH HARROW, OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISKING OPERATION SHOULD BE ON THE GENERAL CONTOUR, CONTRARY TILLAGE UNTIL A REASONABLE UNIFORM SEED BED IS PREPARED.
  - c. INJECT SEEDS JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE RETILLED IN ACCORDANCE WITH THE ABOVE.
  - d. SOILS HIGH IN SULPHUR OR HAVING A PH OF 4 OR LESS REFER TO STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOILS, PG. 1-1.
3. SEEDING
  - a. TEMPORARY VEGETATIVE SEEDING COVER SHALL CONSIST OF PERENNIAL, RHYZOMES APPLIED UNIFORM AT A RATE OF 1 POUND PER 1,000 SF OR 100 LBS/ACRE WITH AN OPTIMUM SEED DEPTH OF 0.25" TWICE THE DEPTH OF ROOT SYSTEM IN ACCORDANCE WITH TABLE 7.2, PAGE 7-3.
  - \*SEEDING DATES: 2/15-5/1 AND 8/15-10/15
  - b. CONVENTIONAL SEEDING: APPLY SEED UNIFORM BY HAND, CYCLONE (CENTRIFUGAL) SEEDER, DROP SEEDER, DRILL OR CULTIVATOR SEEDER, EXCEPT FOR BROADCAST HYDROSEEDING OR CULTRACHED SEEDING. SEED SHALL BE INCORPORATED INTO THE SOIL TO A DEPTH OF 1/4 TO 1/2 INCH, BY RAKING OR DRAGGING. DEPTH OF SEED PLACEMENT MUST BE 1/4 INCH DEEPER ON CORNER TILLED SOIL.
  - c. HYDROSEEDING IS A BROADCAST SEEDING METHOD USUALLY INVOLVING A TRUCK OR TRAILER MOUNTED TANK, WITH AN AGITATION SYSTEM AND HYDRAULIC PUMP FOR MIXING SEED, WATER AND FERTILIZER AND SPRAYING THE MIX ONTO THE PREPARED SEED BED. MULCH SHALL NOT BE INCLUDED IN THE TANK WITH SEED. SHORT FIBERED MULCH MAY BE APPLIED WITH A HYDROSEEDER FOLLOWING SEEDING. ALSO SEE SECTION 9 MULCHING. HYDROSEEDING IS NOT A PREFERRED SEEDING METHOD BECAUSE SEED AND FERTILIZER ARE APPLIED TO THE SURFACE AND NOT INCORPORATED INTO THE SOIL. POND SEED TO SOIL CONTACT OCCURS REDUCING SEED GERMINATION AND GROWTH. HYDROSEEDING MAY BE USED FOR AREAS TOO STEEP FOR CONVENTIONAL EQUIPMENT TO TRAVEL OR TOO OBSTRUCTED WITH ROCKS, STAMPS, ETC.
  - d. AFTER SEEDING, FIRING THE SOIL WITH A CORRUGATED ROLLER WILL ASSURE GOOD SEED TO SOIL CONTACT, RESTORE CAPILLARITY, AND IMPROVE SEEDLING EMERGENCE. THIS IS THE PREFERRED METHOD, WHEN PERFORMED ON THE CONTOUR, SHEET EROSION WILL BE MINIMIZED AND WATER CONSERVATION ON SITE WILL BE MAXIMIZED.
4. MULCHING
  - a. MULCHING IS REQUIRED ON ALL SEEDING. MULCH WILL PROTECT AGAINST EROSION BEFORE GRASS IS ESTABLISHED AND WILL PROMOTE FASTER AND EARLIER ESTABLISHMENT. THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED COMPLIANCE WITH THIS MULCHING REQUIREMENT.
  - b. STRAW OR HAY, UNPROCESSED SMALL GRASS STRAW, HAY FREE OF SEEDS, APPLIED AT THE RATE OF 1.1 TO 2.2 TONS PER ACRE (70 TO 90 POUNDS PER 1,000 SQUARE FEET), EXCEPT THAT WHERE A CRUMPER IS USED INSTEAD OF A LIQUID MULCH-BINDER (CRUMPER OR ADHESIVE AGENT), THE RATE OF APPLICATION IS 3 TONS PER ACRE. MULCH CHOPPER-BLOWERS MUST NOT DRAG THE MULCH. HAY MULCH IS NOT RECOMMENDED FOR ESTABLISHING FINE TURF OR LAWNS DUE TO THE PRESENCE OF WEED SEEDS.
  - c. APPLICATION: SPREAD MULCH UNIFORM BY HAND OR MECHANICALLY SO THAT APPROXIMATELY 95% OF THE SOIL SURFACE WILL BE COVERED FOR UNDERSEED DISTRIBUTION OF HAND-SPREAD MULCH. DIVIDE AREA INTO APPROXIMATELY 1,000 SQUARE FEET SECTIONS AND DISTRIBUTE 70 TO 90 POUNDS WITHIN EACH SECTION.
  - d. ANCHORS SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PLACEMENT TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS, DEPENDING ON THE SIZE OF THE AREA, STEEPNESS OF SLOPES, AND COSTS:
    1. PEG AND TWINE: DRIVE 8 TO 10 INCH WOODEN PEGS TO WITHIN 2 TO 3 INCHES OF THE SOIL SURFACE EVERY 4 FEET IN ALL DIRECTIONS. STAKES MAY BE DRIVEN BEFORE OR AFTER APPLYING MULCH. SECURE TWINE AROUND EACH PEG WITH TWO OR MORE ROUND TURNS.
    2. MULCH NETTINGS: STAPLE PAPER, JUTE, COTTON, OR PLASTIC NETTINGS TO THE SOIL SURFACE. USE A DEGRADABLE NETTING IN AREAS TO BE MOVED.
    3. CRUMPER (MULCH ANCHORING TOOL): A TRACTOR-DRAWN IMPLEMENT, SOMEWHAT LIKE A DISC HARROW, ESPECIALLY DESIGNED TO PUSH OR CUT SOME OF THE BROADCAST LONG FIBER MULCH INTO THE SOIL SO AS TO ANCHOR IT AND LEAVE PART STANDING UPRIGHT. THIS TECHNIQUE IS LIMITED TO AREAS TRAVERSIBLE BY A TRACTOR, WHICH MUST OPERATE ON THE CONTOUR OF SLOPES. STRAW MULCH MUST BE 3 TONS PER ACRE, NO TACKLING OR ADHESIVE AGENT IS REQUIRED.
    4. LIQUID MULCH-BINDERS - MAY BE USED TO ANCHOR HAY OR STRAW MULCH.
      - a. APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND MAY CATCH THE MULCH IN VALLEYS, AND AT CRESTS OF BANKS. THE REMAINDER OF THE AREA SHOULD BE UNIFORM IN APPEARANCE.
      - b. USE ONE OF THE FOLLOWING:
        - (1) ORGANIC AND VEGETABLE BASED BINDERS - NATURALLY OCCURRING, POWDER BASED, HYDROPHILIC MATERIALS WHICH WHEN MIXED WITH WATER FORMULATES A GEL AND WHEN APPLIED TO MULCH UNDER SATISFACTORY CURING CONDITIONS WILL FORM MEMBRANED NETWORKS OF INSOLUBLE POLYMERS. THE VEGETABLE GEL SHALL BE PHYSIOLOGICALLY HARMLESS AND NOT RESULT IN A PHYTOOTOXIC EFFECT OR IMPEDER GROWTH OF TURF GRASS. USE AT RATES AND WEATHER CONDITIONS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH MATERIALS. MANY NEW PRODUCTS ARE AVAILABLE. SOME OF WHICH MAY NEED FURTHER EVALUATION FOR USE IN THIS STATE.
        - (2) SYNTHETIC BINDERS - HIGH POLYMER SYNTHETIC EMULSION, MISCIBLE WITH WATER WHEN DILUTED AND FOLLOWING APPLICATION TO MULCH DRYING AND CURING SHALL NO LONGER BE SOLUBLE OR DISPERSIBLE IN WATER. IT SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURER AND REMAIN TACKY UNTIL GERMINATION OF GRASS.

5. IRRIGATION (WHERE FEASIBLE)
  - a. IF SOIL MOISTURE IS DEFICIENT SUPPLY NEW SEEDING WITH ADEQUATE WATER A MINIMUM OF 1/4 INCH ABOVE UP TO TWICE A DAY UNTIL VEGETATION IS WELL ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE IN UNIMPROVED DRY OR HOT WEATHER OR ON DROUGHTY SITES.
6. TOP DRESSING
  - a. SINCE SOIL ORGANIC MATTER CONTENT AND SLOW RELEASE NITROGEN FERTILIZER (WATER INSOLUBLE) ARE PRESCRIBED INJECTION 2A SEEDING PREPARATION IN THIS STANDARD, NO FOLLOW UP OF TOP DRESSING IS MANDATORY. AN EXCEPTION MAY BE MADE WHERE GROSS NITROGEN DEFICIENCY EXISTS IN THE SOIL. TO THE EXTENT THAT TURF GRASS MAY DEVELOP, IN THAT INSTANCE, TOP DRESSES WITH 10-10-10 OR EQUIVALENT AT 300 POUNDS PER ACRE OR 1 POUND PER 1,000 SQUARE FEET EVERY 3 TO 5 WEEKS UNTIL THE GROSS NITROGEN DEFICIENCY IN THE TURF IS AMELIORATED.
7. ESTABLISHING PERMANENT VEGETATIVE STABILIZATION
  - a. THE QUALITY OF PERMANENT VEGETATION RESTS WITH THE CONTRACTOR. THE TIMING OF SEEDING, PREPARING THE SEEDBED, APPLYING NUTRIENTS, MULCH AND OTHER MANAGEMENT ARE ESSENTIAL. THE SEED APPLICATION RATES IN TABLE 4.3 ARE REQUIRED WHEN A REDUCED COMPARISON TO ACTUAL ESTABLISHMENT TO PERMANENT VEGETATION IS ESTABLISHED PRIOR TO REQUESTING A REDUCED COMPARISON FROM THE DISTRICT. THESE RATES APPLY TO ALL METHODS OF SEEDING. THE SEEDING METHOD THAT VEGETATION MEANS 80% VEGETATIVE COVER OF THE SEEDED SPECIES AND MOVED ONCE THIS DESIGNATION OF MOVED ONCE DOES NOT GUARANTEE THE PERMANENCY OF THE TURF SHOULD OTHER MAINTENANCE FACTORS BE NEGLECTED OR OTHERWISE MISMANAGED.

8. ESTIMATE A TREE'S PROTECTED ROOT ZONE (PRZ) BY CALCULATING THE CRITICAL ROOT RADIUS (CRR).
  - 1. MEASURE THE DBH (DIAMETER OF TREE AT GREATEST HEIGHT, 4.5 FEET ABOVE BRANCH) IN INCHES.
  - 2. MULTIPLY EXPRESS DBH BY 1.5 OR 1.0. THE RESULT IS THE RESULT IN FEET.
  - DBH X 1.5: CRITICAL ROOT RADIUS FOR OLDER, UNEARTHLY, OR SENSITIVE SPECIES.
  - DBH X 1.0: CRITICAL ROOT RADIUS FOR YOUNGER, HEALTHY OR TOLERANT SPECIES.
9. TREE PROTECTION - TILE AND GRAVEL WILL ALLOW AIR CIRCULATION TO ROOT ZONE UNDER A FILL.

10. TREE PROTECTION (FILL AREAS)
  - a. A RETAINING WALL PROTECTS A TREE FROM A LOWERED GRADE.
  - b. ORIGINAL GRADE.
  - c. NEW GRADE.
  - d. A RETAINING WALL PROTECTS A TREE FROM A LOWERED GRADE.

11. TREE PROTECTION (CUT AREAS)
  - a. ORIGINAL GRADE.
  - b. NEW GRADE.
  - c. A RETAINING WALL PROTECTS A TREE FROM A LOWERED GRADE.

PRELIMINARY & FINAL MAJOR SITE PLAN

### CONSTRUCTION SEQUENCE

EXACT TIMING FOR DEVELOPMENT OF THIS PROJECT IS NOT KNOWN AT THIS TIME. HOWEVER, IT IS ANTICIPATED THAT CONSTRUCTION WILL COMMENCE IN THE SPRING OF 2022 AND WILL PROCEED IMMEDIATELY AND CONTINUOUSLY ONCE THE REQUIRED APPROVALS ARE SECURED. ITEMS AND DURATIONS OF CONSTRUCTION WILL OCCUR APPROXIMATELY AS FOLLOWS:

PHASE	DURATION
1. INSTALL TEMPORARY SOIL EROSION FACILITIES (CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, INSTALL SILT FENCE, INSTALL TREE PROTECTION FENCING)	IMMEDIATELY
2. SITE DEMOLITION	1 WEEK
3. ROUGH CLEARING AND GRADING (BASINS SHALL BE EXCAVATED NO FURTHER THAN 1 FOOT ABOVE FINAL GRADE)	2 WEEKS
4. TEMPORARY SEEDING	IMMEDIATELY
5. UTILITY INSTALLATION	2 WEEKS
6. INSTALL INLET PROTECTION	IMMEDIATELY
7. FINAL EXCAVATION/CONSTRUCTION OF STORMWATER BASINS	1 WEEK
8. CURBS AND SIDEWALK CONSTRUCTION	1 WEEK
9. PAVEMENT SUB-BASE	1 WEEK
10. CONSTRUCTION OF BUILDING(S)	9 MONTHS
11. MAINTENANCE OF TEMPORARY EROSION CONTROL MEASURES	CONTINUOUSLY
12. PRELIMINARY INSTALLATION OF LANDSCAPING	1 WEEK
13. FINAL PAVEMENT COURSE	1 WEEK
14. FINAL CONSTRUCTION/STABILIZATION OF SITE	1 WEEK

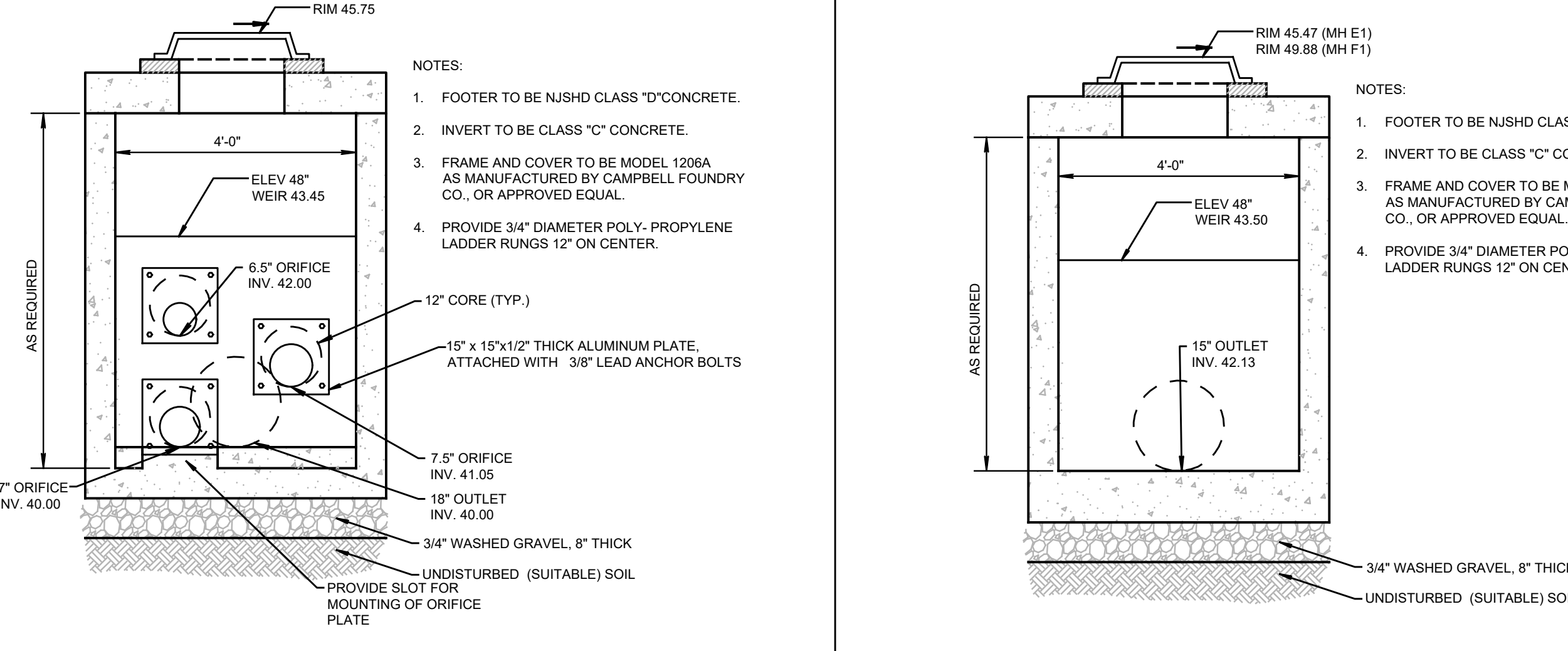
\*TEMPORARY SEEDING SHALL ALSO BE PERFORMED WHEN NECESSARY IN ACCORDANCE WITH NOTE NO. 1 OF THE SOIL EROSION AND SEDIMENT CONTROL NOTES.

NOTES:  
CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PERMANENT SOIL EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. THE PROPERTY OWNERS SHALL ASSURE THIS RESPONSIBILITY AFTER CONSTRUCTION IS COMPLETE AND CERTIFICATES OF OCCUPANCY ARE ISSUED.  
THE SOIL EROSION INSPECTOR MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED, AS DIRECTED BY THE DISTRICT INSPECTOR.

THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE ROADWAYS CLEAN AT ALL TIMES. ANY SEDIMENT SPILLED OR TRACKED ON THE ROADWAY WILL BE CLEANED UP IMMEDIATELY, OR AT MINIMUM, BY THE END OF EACH WORK DAY.

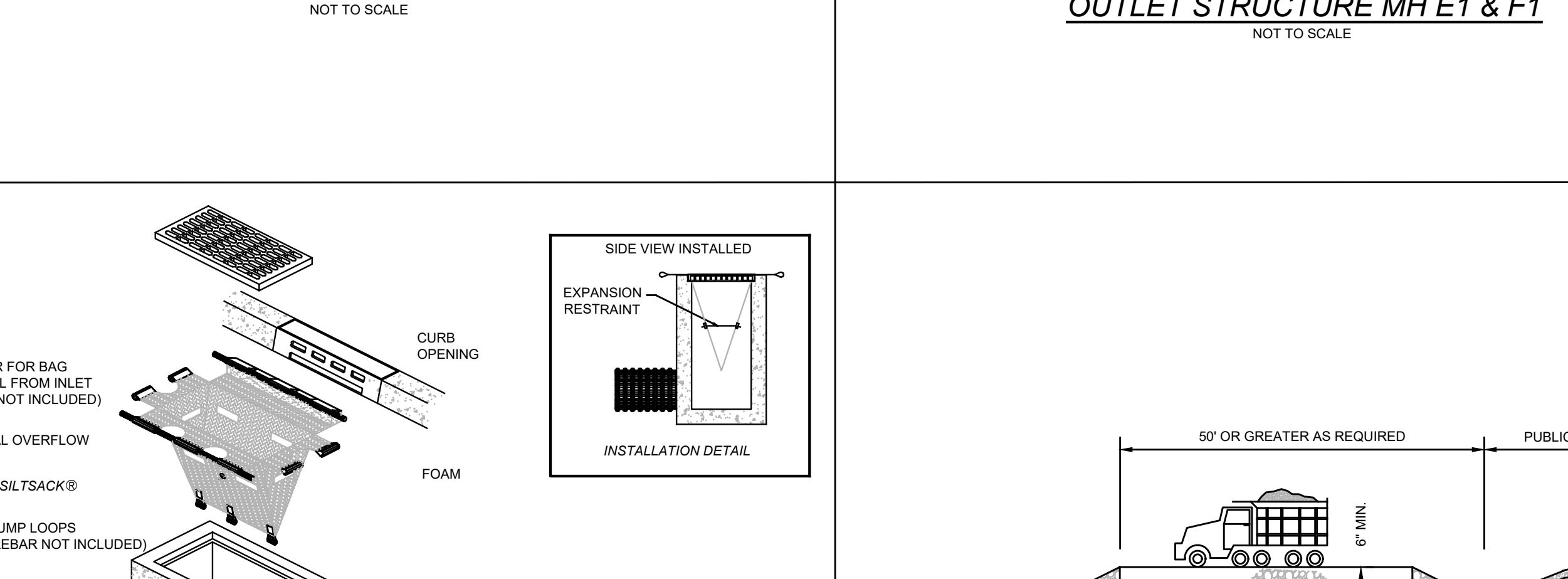
DUST GENERATION SHALL BE CONTROLLED ON A CONSTANT BASIS BY WETTING THE SURFACE AND/OR APPLICATION OF CALCIUM CHLORIDE.  
STEEP SLOPES SHALL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR SUITABLE SOIL (SEE ANCHORING NOTES & NOTE NO. 6 OF SOIL EROSION & SEDIMENT CONTROL NOTES).

ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES ON INDIVIDUAL SITES SHALL APPLY TO ANY SUBSEQUENT OWNERS.



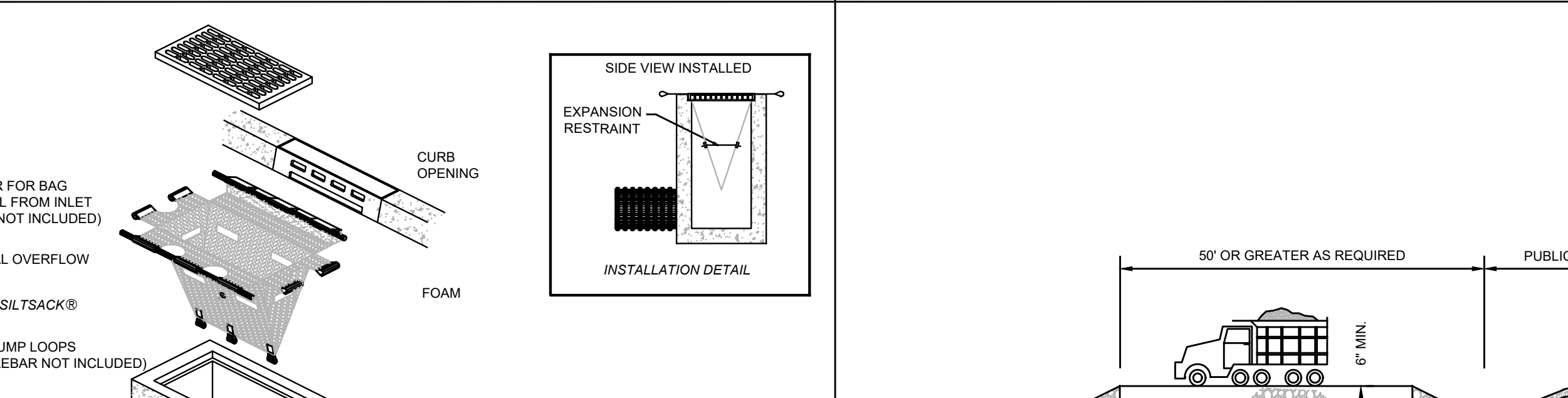
OUTLET STRUCTURE MH G1

NOT TO SCALE



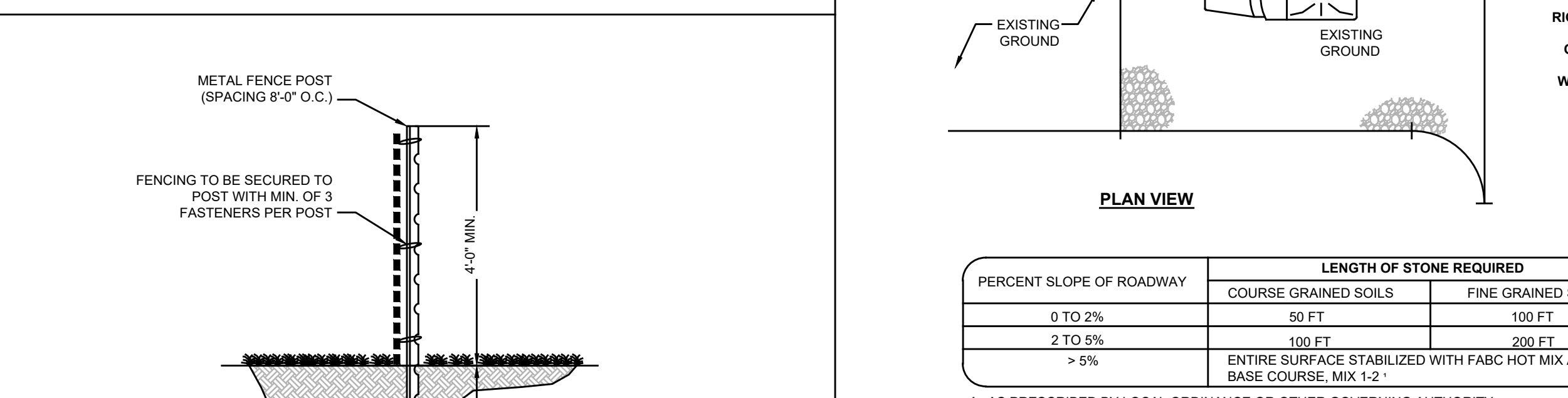
OUTLET STRUCTURE MH E1 & F1

NOT TO SCALE



INLET PROTECTION DETAIL

NTS

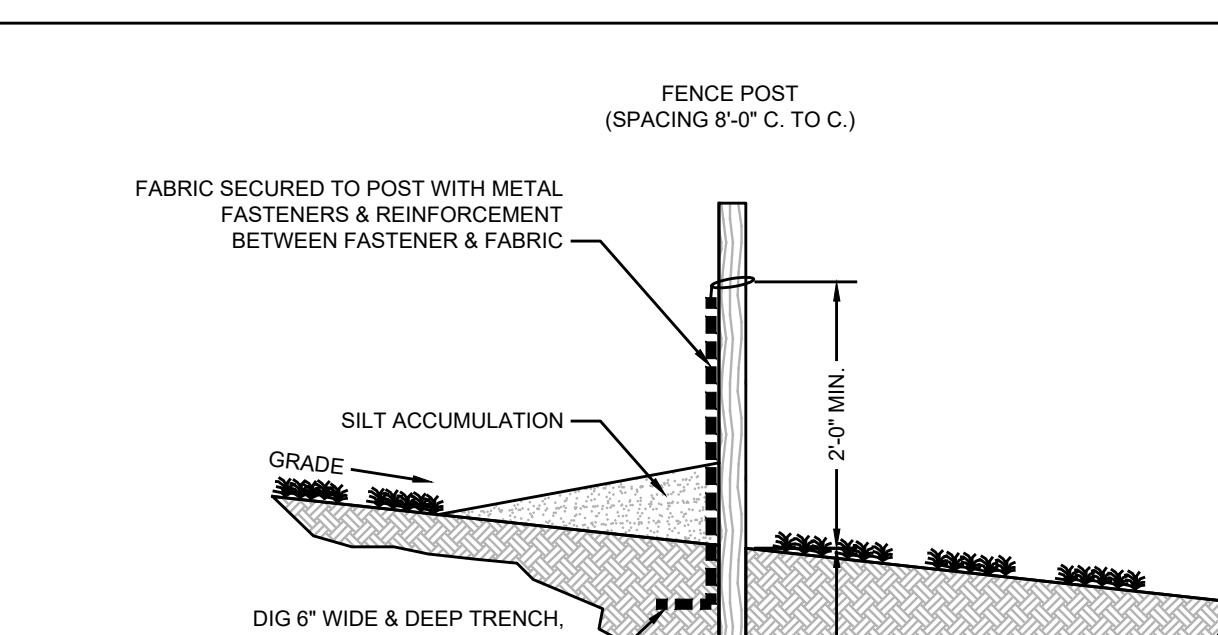


STABILIZED CONSTRUCTION ENTRANCE

NTS

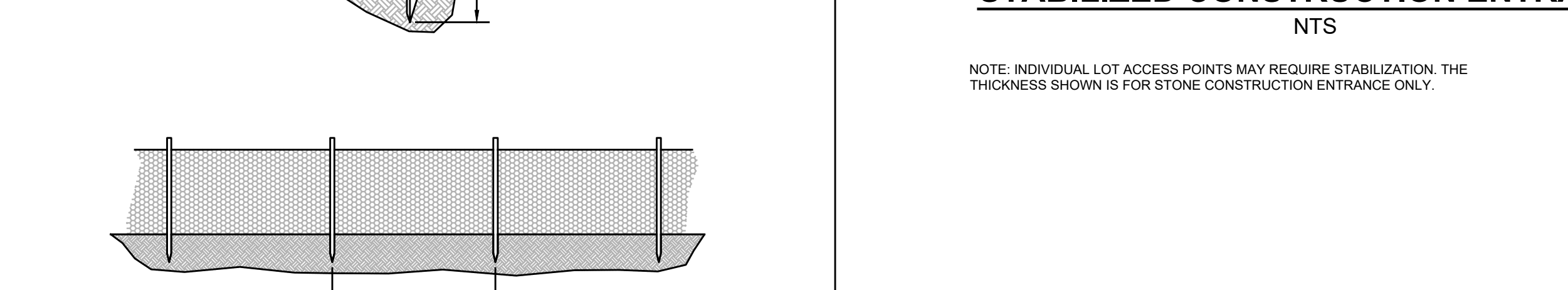
PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COURSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2 TO 5%	100 FT	200 FT
> 5%	ENTIRE SURFACE STABILIZED WITH FINE HOT MIX ASPHALT BASE COURSE, MIX 1-2	

1. AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.



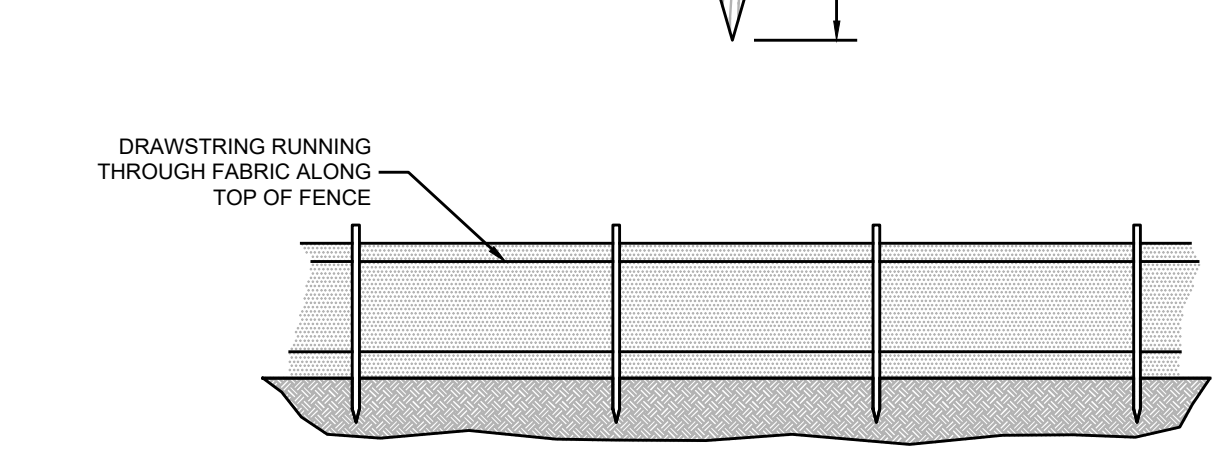
SILT FENCE DETAIL

NTS



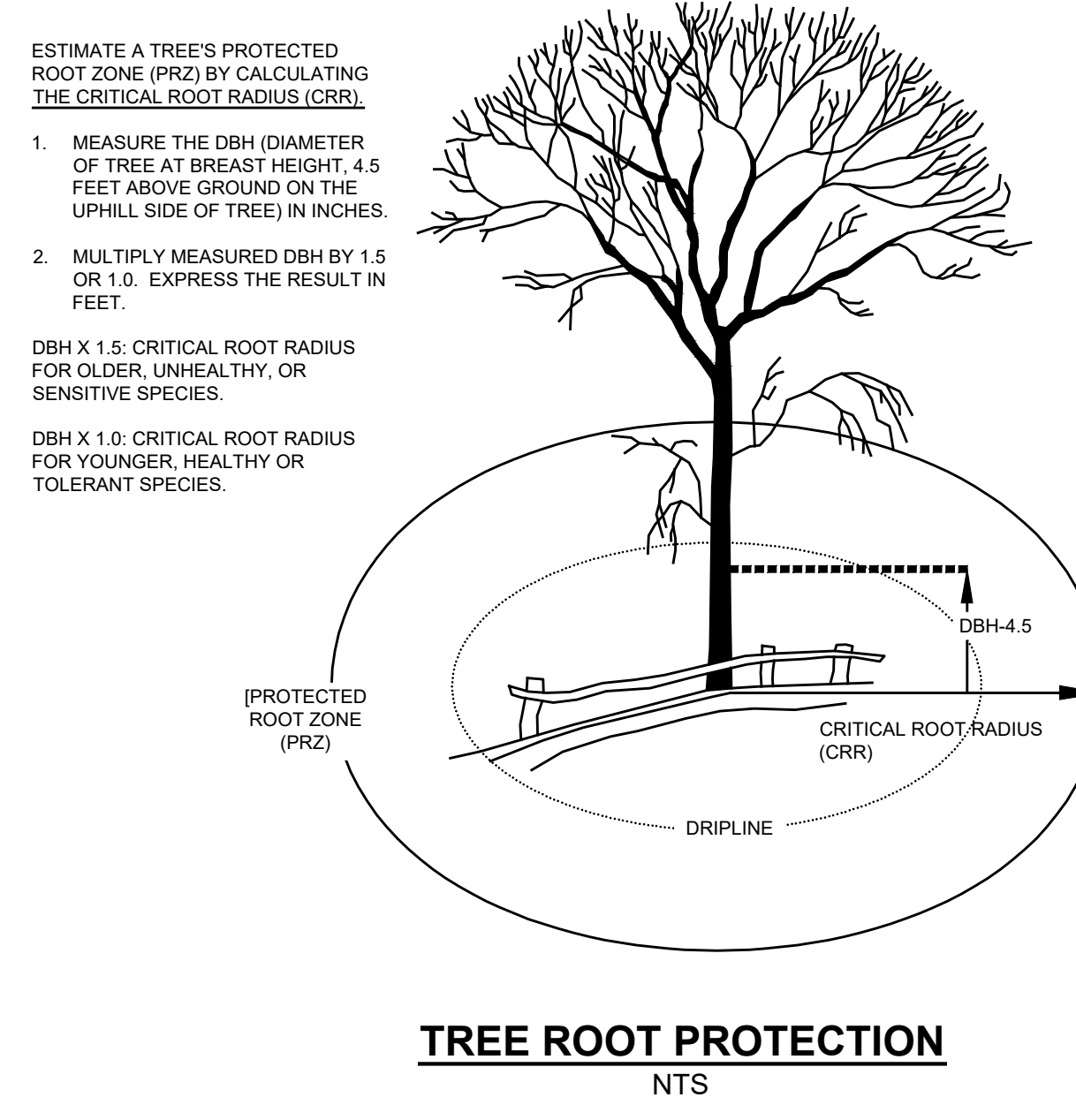
TREE PROTECTION FENCING

NTS



SECTION THROUGH SOIL STOCKPILE (TYP.)

NTS



TREE PROTECTION (FILL AREAS)

NTS

### PROJECT INFORMATION

PROJECT NAME:

PROJECT LOCATION:

OWNER:

ARCHITECT:

SURVEYOR:

CLIENT:

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SOIL MANAGEMENT AND PREPARATION

SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

THIS SECTION OF THIS STANDARD ADDRESSES THE POTENTIAL FOR EXCESSIVE SOIL COMPACTION IN LIGHT OF THE INTENDED LAND USE. TESTING FOR EXCESSIVE SOIL COMPACTION WHERE PERMANENT VEGETATION IS TO BE ESTABLISHED AND MITIGATION OF EXCESSIVE SOIL COMPACTION WHEN APPROPRIATE.

- DUE TO USE OR SETTING, CERTAIN DISTURBED AREAS WILL NOT REQUIRE COMPACTION REMEDIATION INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
1. WITHIN 20 FEET OF BUILDING FOUNDATIONS WITH BASEMENTS, 12 FEET FROM SLAB OR CRAWL SPACE CONSTRUCTION
2. WHERE SOILS OR CRAWL SURFACES WILL BE REQUIRED TO SUPPORT POST-CONSTRUCTION VEHICULAR TRAFFIC LOADS SUCH AS ROADS, PARKING LOTS AND DRIVEWAYS (INCLUDING GRAVEL SURFACES), BICYCLE PATHS OR PEDESTRIAN WALKWAYS (SIDEWALKS ETC.)
3. AIRPORTS, RAILWAYS OR OTHER TRANSPORTATION FACILITIES
4. AREAS REQUIRING INDUSTRY OR GOVERNMENT SPECIFIED SOIL DESIGNS, INCLUDING GOLF COURSES, LANDFILLS, WETLAND RESTORATION, SEPTIC DISPOSAL FIELDS, WETLAND PONDING, ETC.
5. AREAS GOVERNED OR REGULATED BY OTHER LOCAL, STATE OR FEDERAL REGULATIONS WHICH DICTATE SOIL CONDITIONS (BROWNFIELDS (CAPPED USES), URBAN REDEVELOPMENT AREAS, INFILL AREAS, RECYCLING YARDS, JUNK YARDS, QUARRIES AND)
6. SLOPES DETERMINED TO BE INAPPROPRIATE FOR SAFE OPERATION OF EQUIPMENT
7. PORTIONS OF A SITE WHERE NO HEAVY EQUIPMENT TRAVEL OR OTHER DISTURBANCE HAS TAKEN PLACE
8. AREAS RECEIVING TEMPORARY VEGETATIVE STABILIZATION IN ACCORDANCE WITH THE STANDARD.
9. WHERE THE AREA AVAILABLE FOR REMEDIATION PRACTICES IS 500 SQUARE FEET OR LESS IN SIZE.
10. LOCATIONS CONTAINING SHALLOW (CLOSE TO THE SURFACE) BEDROCK CONDITIONS.

AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION SHALL BE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.

SOIL COMPACTION REMEDIATION OR TESTING TO PROVE REMEDIATION IS NOT NECESSARY WILL BE REQUIRED IN AREAS WHERE PERMANENT VEGETATION IS TO BE ESTABLISHED THAT ARE NOT OTHERWISE EXEMPTED ABOVE. TESTING METHOD SHALL BE SELECTED AND SOIL COMPACTION TESTING SHALL BE PERFORMED BY THE CONTRACTOR OR OTHER PROJECT OWNERS REPRESENTATIVE (E.G. ENGINEER). A MINIMUM OF TWO (2) TESTS SHALL BE PERFORMED FOR PROJECTS WITH AN OVERALL LIMIT OF DISTURBANCE OF UP TO ONE (1) ACRE AND AT A RATE OF TWO (2) TESTS PER ACRE OR THE OVERALL LIMIT OF DISTURBANCE FOR LARGER AREAS WHICH SHALL BE EVENLY DISTRIBUTED OVER THE AREA OF DISTURBANCE SUBJECT TO TESTING. TESTS SHALL BE PERFORMED IN AREAS REPRESENTATIVE OF THE CONSTRUCTION ACTIVITY PREVAILING IN THE AREA. IN THE EVENT THIS TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE TESTING METHOD, THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM COMPACTION MITIGATION OVER THE ENTIRE DISTURBED AREA (EXCLUDING EXEMPT AREAS) OR TO PERFORM ADDITIONAL TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION.

SOIL COMPACTION TESTING IS NOT REQUIRED IF WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

SOIL TEST METHOD OPTIONS

1. PROBING WIRE TEST METHOD
THIS TEST SHALL BE CONDUCTED WITH A FIRM WIRE (15-1/2 GAUGE STEEL WIRE - E.G. SURVEY MARKER FLAG, STRAIGHT WIRE STOCK ETC.), 18 TO 21 INCHES IN LENGTH WITH 6 INCHES FROM ONE END VISIBLY MARKED ON THE WIRE. CONDUCT WIRE FLAG TEST BY HOLDING THE WIRE FLAG NEAR THE FLAG END AND PUSH IT VERTICALLY INTO THE SOIL AT SEVERAL DIFFERENT LOCATIONS IN THE FIELD TO THE LESSER OF A 6 INCH DEPTH OR THE DEPTH AT WHICH IT BENDS DUE TO RESISTANCE IN THE SOIL. RECORD THE DEPTH AT WHICH IT BENDS DUE TO RESISTANCE IN THE SOIL. THE WIRE SHOULD PENETRATE WITHOUT BENDING OR DEFORMING AT LEAST 6" INTO THE GROUND BY HAND, WITHOUT THE USE OF TOOLS. IF PENETRATION FAILS AND AN OBSTRUCTION IS SUSPECTED (ROCKS, ROOT, DEBRIS, ETC.) THE TEST CAN BE REPEATED IN THE SAME GENERAL AREA. IF THE TEST IS SUCCESSFUL, THE SOIL IS NOT EXCESSIVELY COMPACTED, IF THE WIRE IS DIFFICULT TO INSERT (WIRE BENDS OR DEFORMS PRIOR TO REACHING 6 INCHES) THE SOIL MAY BE EXCESSIVELY COMPACTED AND COMPACTION MITIGATION OR FURTHER TESTING VIA METHOD 3 OR 4 BELOW IS REQUIRED, THE CHOICE OF WHICH IS AT THE CONTRACTOR/OWNER'S DISCRETION.

2. HANDHELD SOIL PENETROMETER TEST METHOD
THIS TEST SHALL BE CONDUCTED BASED ON THE STANDARD OPERATION PROCEDURE (SOP) #RCE2010-001, PREPARED BY THE RUTGERS COOPERATIVE EXTENSION, IMPLEMENTED JUNE 1, 2010. LAST REVISED FEBRUARY 28, 2011. A RESULT OF LESS THAN OR EQUAL TO 300 PSI SHALL BE CONSIDERED PASSING. IF THE RESULT IS GREATER THAN 300 PSI THE SOIL MAY BE EXCESSIVELY COMPACTED AND COMPACTION MITIGATION OR FURTHER TESTING VIA METHOD 3 OR 4 BELOW IS REQUIRED, THE CHOICE OF WHICH IS AT THE CONTRACTOR/OWNER'S DISCRETION.

3. TUBE BULK DENSITY TEST METHOD
THIS TEST SHALL BE CERTIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER UTILIZING ONLY UNDISTURBED SAMPLES (RECONSTITUTION OF THE SAMPLE NOT PERMITTED) COLLECTED UTILIZING THE PROCEDURE FOR SOIL BULK DENSITY TESTS AS DESCRIBED IN THE USDA NRCS SOIL QUALITY TEST KIT GUIDE, SECTION 1-4, JULY 2001. WHEN THE TEXTURE OF THE SOIL TO BE TESTED IS A SAND OR LOAMY SAND AND LACK OF SOIL COHESION OR THE PRESENCE OF LARGE AMOUNTS OF COARSE FRAGMENTS, ROOTS OR WORM CHANNELS PREVENT THE TAKING OF UNDISTURBED SAMPLES, THIS TEST SHALL NOT BE USED.

WHERE THE RESULTS OF REPPLICATE TESTS DIFFER BY MORE THAN TEN PERCENT (10%), THE SAMPLES SHALL BE EXAMINED FOR THE FOLLOWING DEFECTS:

- I. CRACKS, WORM CHANNELS, LARGE ROOT CHANNELS OR POOR SOIL TUBE CONTACT WITHIN THE SAMPLES;
II. LARGE PIECES OF GRAVEL, ROOTS OR OTHER FOREIGN OBJECTS;
III. SMEARING OR COMPACTION OF THE UPPER OR LOWER SURFACE OF THE SAMPLES

IF ANY OF THE DEFECTS DESCRIBED IN 3 (II-III) ABOVE ARE FOUND, THE DEFECTIVE CORE(S) SHALL BE DISCARDED AND THE TEST REPEATED USING A NEW REPLICATE SAMPLE FOR EACH DEFECTIVE REPLICATE SAMPLE. THE BULK DENSITY (DEFINED AS THE WEIGHT OF DRY SOIL PER VOLUME) RESULTS SHALL BE COMPARED WITH THE MAXIMUM DRY BULK DENSITIES IN TABLE 19-1. A RESULT OF LESS THAN OR EQUAL TO THE APPLICABLE MAXIMUM BULK DENSITY SHALL BE CONSIDERED PASSING. IF THE RESULT IS GREATER THAN THE MAXIMUM BULK DENSITY THE SOIL SHALL BE CONSIDERED EXCESSIVELY COMPACTED AND COMPACTION MITIGATION IS REQUIRED.

4. NUCLEAR DENSITY TEST METHOD
THIS TEST SHALL BE CERTIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER AND CONDUCTED BY A NUCLEAR GAUGE CERTIFIED INSPECTOR PURSUANT TO ASTM D6958. THE BULK DENSITY MEASUREMENT RESULTS SHALL BE COMPARED WITH THE MAXIMUM DRY BULK DENSITIES IN TABLE 19-1. A RESULT OF LESS THAN OR EQUAL TO THE APPLICABLE MAXIMUM BULK DENSITY SHALL BE CONSIDERED PASSING. IF THE RESULT IS GREATER THAN THE MAXIMUM BULK DENSITY THE SOIL SHALL BE CONSIDERED EXCESSIVELY COMPACTED AND COMPACTION MITIGATION IS REQUIRED.

TABLE 19-1 - MAXIMUM DRY BULK DENSITIES (GRAMS/CUBIC CENTIMETER) BY SOIL TYPE

SOIL TYPE/TEXTURE	BULK DENSITY (G/CC)
COARSE, MEDIUM AND FINE SANDS AND LOAMY SANDS	1.80
VERY FINE SAND AND LOAMY VERY FINE SAND	1.77
SANDY LOAM	.75
LOAM SANDY CLAY LOAM	1.70
CLAY LOAM	1.65
SANDY CLAY	1.60
SILT SILT LOAM	1.55
SILTY CLAY LOAM	1.50
SILTY CLAY	1.45
CLAY	1.40

ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

PROCEDURES FOR SOIL COMPACTION MITIGATION
IF SUBGRADE SOILS ARE DETERMINED TO BE EXCESSIVELY COMPACTED BY TESTING, AS IDENTIFIED ABOVE, PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER. RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.) OR IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER.

INSTALLATION REQUIREMENTS
TIMBER, LOGS, BRUSH, RUBBISH, ROCKS, STUMPS AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OR FILL AREAS SHALL BE REMOVED AND DISPOSED OF ACCORDING TO THE PLAN.

TOPSOIL IS TO BE STRIPPED AND STOCKPILED IN AMOUNTS NECESSARY TO COMPLETE FINISH GRADING OF ALL EXPOSED AREAS REQUIRING TOPSOIL. SEE STANDARD FOR TOPSOILING, PG. 8-1.

FILL MATERIAL IS TO BE FREE OF BRUSH, RUBBISH, TIMBER, LOGS, VEGETATIVE MATTER AND STUMPS IN AMOUNTS THAT WILL BE DETRIMENTAL TO CONSTRUCTING STABLE FILLS.

ALL STRUCTURAL FILLS SHALL BE COMPACTED AS DETERMINED BY STRUCTURAL ENGINEERING REQUIREMENTS FOR THEIR INTENDED PURPOSE AND AS REQUIRED TO REDUCE SLIPPING, EROSION OR EXCESSIVE SATURATION.

ALL DISTURBED AREAS SHALL BE LEFT WITH A NEAT AND FINISHED APPEARANCE AND SHALL BE PROTECTED FROM EROSION. SEE STANDARDS FOR PERMANENT VEGETATIVE COVER FOR SOIL STABILIZATION, PG. 4-1.

TREES TO BE RETAINED SHALL BE PROTECTED IF NECESSARY IN ACCORDANCE WITH THE STANDARD FOR TREE PROTECTION DURING CONSTRUCTION, PG. 8-1.

STANDARD FOR TOPSOILING

1. MATERIALS

- A. TOPSOIL SHOULD BE FRABLE1, LOAMY2, FREE OF DEBRIS, OBJECTIONABLE WEEDS AND STONES, AND CONTAIN NO TOXIC SUBSTANCE OR ADVERSE CHEMICAL OR PHYSICAL CONDITION THAT MAY BE HARMFUL TO PLANT GROWTH. SOLUBLE SALTS SHOULD NOT BE EXCESSIVE (CONDUCTIVITY LESS THAN 6.5 MILLIMHO PER CENTIMETER, MORE THAN 0.5 MILLIMHO/M MAY DESICCATATE SEEDLINGS AND ADVERSELY IMPACT GROWTH). IMPORTED TOPSOIL SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 2.75 PERCENT. ORGANIC MATTER CONTENT MAY BE RAISED BY ADDITIVES.
B. TOPSOIL SUBSTITUTE IS A SOIL MATERIAL WHICH MAY HAVE BEEN AMENDED WITH SAND, SILT, CLAY, ORGANIC MATTER, FERTILIZER OR LIME AND HAS THE APPEARANCE OF TOPSOIL. TOPSOIL SUBSTITUTES MAY BE UTILIZED ON SITES WITH INSUFFICIENT TOPSOIL FOR ESTABLISHING PERMANENT VEGETATION. TOPSOIL SUBSTITUTE MATERIALS SHALL MEET THE REQUIREMENTS OF TOPSOIL NOTED ABOVE. SOIL TESTS SHALL BE PERFORMED TO DETERMINE THE COMPONENTS OF SAND, SILT, CLAY, ORGANIC MATTER, SOLUBLE SALTS AND PH LEVEL.

2. STRIPPING AND STOCKPILING

- A. FIELD EXPLORATION SHOULD BE MADE TO DETERMINE WHETHER QUANTITY AND OR QUALITY OF SURFACE SOIL JUSTIFIES STRIPPING.
B. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA.
C. WHERE FEASIBLE, LIME MAY BE APPLIED BEFORE STRIPPING AT A RATE DETERMINED BY SOIL TESTS TO BRING THE SOIL PH TO APPROXIMATELY 6.5
D. A 4-6 INCH STRIPPING DEPTHS IS COMMON, BUT MAY VARY DEPENDING ON THE PARTICULAR SOIL.
E. STOCKPILES OF TOPSOIL SHOULD BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
F. STOCKPILES SHOULD BE VEGETATED IN ACCORDANCE WITH STANDARDS PREVIOUSLY DESCRIBED HEREIN. SEE STANDARDS FOR PERMANENT (PG. 4-1) OR TEMPORARY (PG.7-1) VEGETATIVE COVER FOR SOIL STABILIZATION. WEEDS SHOULD NOT BE ALLOWED TO GROW ON STOCKPILES.

3. SITE PREPARATION

- A. GRADE AT THE ONSET OF THE OPTIMAL SEEDING PERIOD SO AS TO MINIMIZE THE DURATION AND AREA OF EXPOSURE OF DISTURBED SOIL TO EROSION. IMMEDIATELY PROCEED TO ESTABLISH VEGETATIVE COVER IN ACCORDANCE WITH THE SPECIFIED SEED MIXTURE. TIME IS OF THE ESSENCE.
B. GRADE AS NEEDED AND FEASIBLE TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION, SEEDING, MULCH APPLICATION AND ANCHORING, AND MAINTENANCE. SEE THE STANDARD FOR LAND GRADING, PG. 19-1.
C. AS GUIDANCE FOR IDEAL CONDITIONS, SUBSOIL SHOULD BE TESTED FOR LIME REQUIREMENT. LIMESTONE, IF NEEDED, SHOULD BE APPLIED TO BRING SOIL TO A PH OF APPROXIMATELY 6.5 AND INCORPORATED INTO THE SOIL AS NEARLY AS PRACTICAL, TO A DEPTH OF 4 INCHES.
D. BEFORE TOPSOILING, THE SUBSOIL SHALL BE IN COMPLIANCE WITH THE STANDARD FOR LAND GRADING, PG. 19-1.
E. EMPLOY NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, CHANNEL STABILIZATION MEASURES, SEDIMENTATION BASINS, AND WATERWAYS. SEE STANDARDS 11 THROUGH 42.

4. APPLYING TOPSOIL

- A. TOPSOIL SHOULD BE HANDLED ONLY WHEN IT IS DRY ENOUGH TO WORK WITHOUT DAMAGING SOIL STRUCTURE, I.E. LESS THAN FIELD CAPACITY (SEE GLOSSARY).
B. A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 6.0 INCHES, MINIMUM OF 4 INCHES, FIRMED IN PLACE IS REQUIRED. ALTERNATIVE DEPTHS MAY BE CONSIDERED WHERE SPECIAL REGULATORY AND/OR INDUSTRY DESIGN STANDARDS ARE APPROPRIATE SUCH AS ON GOLF COURSES, SPORTS FIELDS, LANDFILL CAPPING, ETC. SOILS WITH A PH OF 4.0 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM DEPTH OF 12 INCHES OF SOIL HAVING A PH OF 5.0 OR MORE, IN ACCORDANCE WITH THE STANDARD FOR MANAGEMENT OF HIGH ACID PRODUCING SOIL (PG. 1-1).
C. PURSUANT TO THE REQUIREMENTS IN SECTION 7 OF THE STANDARD FOR PERMANENT VEGETATIVE STABILIZATION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT PERMANENT VEGETATIVE COVER BECOMES ESTABLISHED ON AT LEAST 80% OF THE SOILS TO BE STABILIZED WITH VEGETATION. FAILURE TO ACHIEVE THE MINIMUM COVERAGE MAY REQUIRE ADDITIONAL WORK TO BE PERFORMED BY THE CONTRACTOR TO INCLUDE SOME OR ALL OF THE FOLLOWING: SUPPLEMENTAL SEEDING, RE-APPLICATION OF LIME AND FERTILIZERS, AND/OR THE ADDITION OF ORGANIC MATTER (I.E. COMPOST) AS A TOP DRESSING. SUCH ADDITIONAL MEASURES SHALL BE BASED ON SOIL TESTS SUCH AS THOSE OFFERED BY RUTGERS COOPERATIVE EXTENSION SERVICE OR OTHER APPROVED LABORATORY FACILITIES QUALIFIED TO TEST SOIL SAMPLES FOR AGRONOMIC PROPERTIES.

SOIL DE-COMPACTION AND TESTING REQUIREMENTS

SOIL COMPACTION TESTING REQUIREMENTS

- 1. SUBGRADE SOILS PRIOR TO THE APPLICATION OF TOPSOIL (SEE PERMANENT SEEDING AND STABILIZATION NOTES FOR TOPSOIL REQUIREMENTS) SHALL BE FREE OF EXCESSIVE COMPACTION TO A DEPTH OF 6.0 INCHES TO ENHANCE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
2. AREAS OF THE SITE WHICH ARE SUBJECT TO COMPACTION TESTING AND/OR MITIGATION ARE GRAPHICALLY DENOTED ON THE CERTIFIED SOIL EROSION CONTROL PLAN.
3. COMPACTION TESTING LOCATIONS ARE DENOTED ON THE PLAN. A COPY OF THE PLAN OR PORTION OF THE PLAN SHALL BE USED TO MARK LOCATIONS OF TESTS, AND ATTACHED TO THE COMPACTION REMEDIATION FORM AVAILABLE FROM THE LOCAL SOIL CONSERVATION DISTRICT. THIS FORM MUST BE FILLED OUT AND SUBMITTED PRIOR TO RECEIVING A CERTIFICATE OF COMPLIANCE FROM THE DISTRICT.
4. IN THE EVENT THAT TESTING INDICATES COMPACTION IN EXCESS OF THE MAXIMUM THRESHOLDS INDICATED FOR THE SIMPLIFIED TESTING METHODS (SEE DETAILS BELOW), THE CONTRACTOR/OWNER SHALL HAVE THE OPTION TO PERFORM EITHER (1) COMPACTION MITIGATION OVER THE ENTIRE MITIGATION AREA DENOTED ON THE PLAN (EXCLUDING EXEMPT AREAS), OR (2) PERFORM ADDITIONAL, MORE DETAILED TESTING TO ESTABLISH THE LIMITS OF EXCESSIVE COMPACTION WHEREUPON ONLY THE EXCESSIVELY COMPACTED AREAS WOULD REQUIRE COMPACTION MITIGATION. ADDITIONAL DETAILED TESTING SHALL BE PERFORMED BY A TRAINED, LICENSED PROFESSIONAL.

COMPACTION TESTING METHODS

- A. PROBING WIRE TEST (SEE DETAIL)
B. HANDHELD PENETROMETER TEST (SEE DETAIL)
C. TUBE BULK DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)
D. NUCLEAR DENSITY TEST (LICENSED PROFESSIONAL ENGINEER REQUIRED)

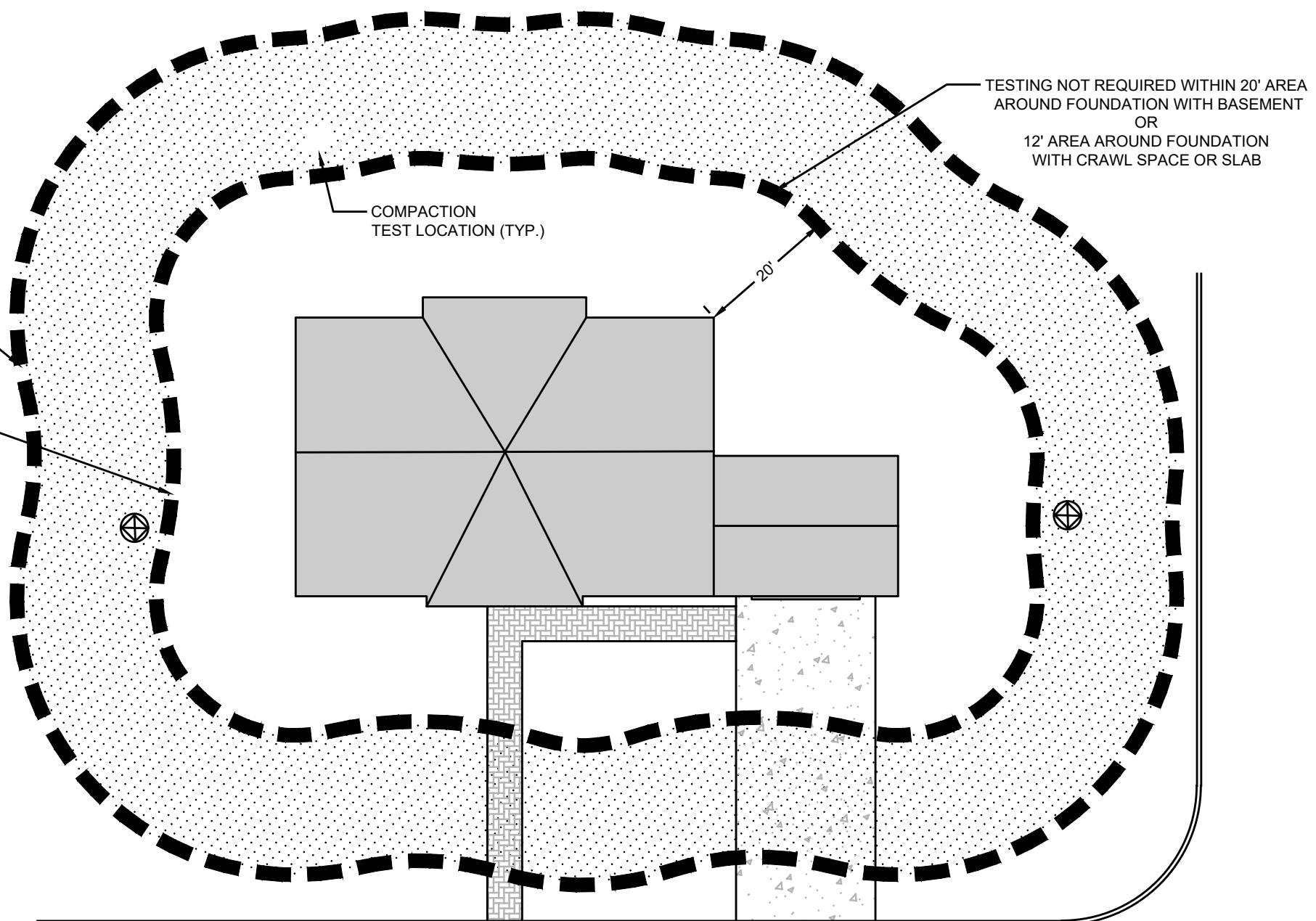
NOTE: ADDITIONAL TESTING METHODS WHICH CONFORM TO ASTM STANDARDS AND SPECIFICATIONS, AND WHICH PRODUCE A DRY WEIGHT, SOIL BULK DENSITY MEASUREMENT MAY BE ALLOWED SUBJECT TO DISTRICT APPROVAL.

SOIL COMPACTION TESTING IS NOT REQUIRED IF WHEN SUBSOIL COMPACTION REMEDIATION (SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) OR SIMILAR) IS PROPOSED AS PART OF THE SEQUENCE OF CONSTRUCTION.

PROCEDURES FOR SOIL COMPACTION MITIGATION

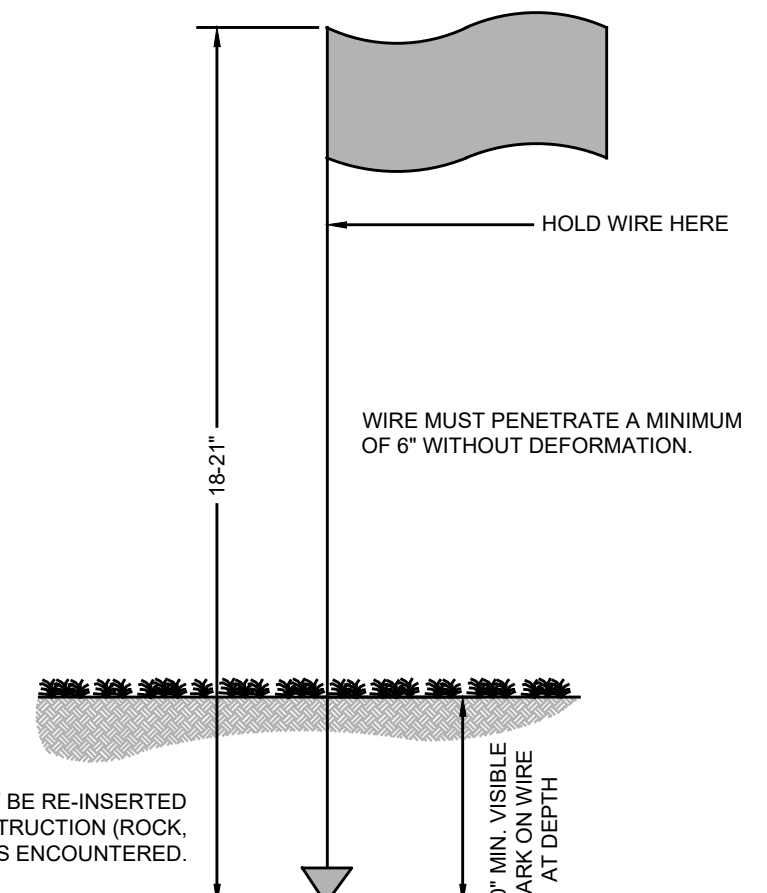
PROCEDURES SHALL BE USED TO MITIGATE EXCESSIVE SOIL COMPACTION PRIOR TO PLACEMENT OF TOPSOIL AND ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.

RESTORATION OF COMPACTED SOILS SHALL BE THROUGH DEEP SCARIFICATION/TILLAGE (6" MINIMUM DEPTH) WHERE THERE IS NO DANGER TO UNDERGROUND UTILITIES (CABLES, IRRIGATION SYSTEMS, ETC.). IN THE ALTERNATIVE, ANOTHER METHOD AS SPECIFIED BY A NEW JERSEY LICENSED PROFESSIONAL ENGINEER MAY BE SUBSTITUTED SUBJECT TO DISTRICT APPROVAL.



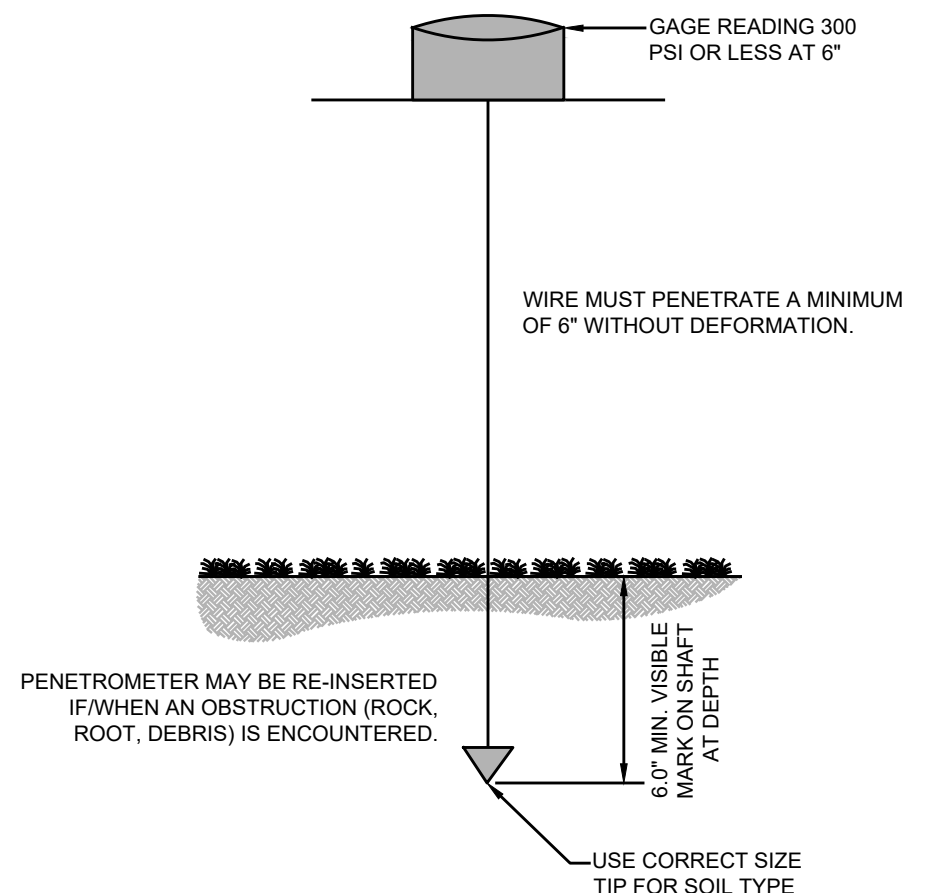
- NOTE:
1. SOIL COMPACTION TESTING LOCATIONS ARE RECOMMENDED LOCATIONS FOR GRADED AND DISTURBED AREAS WITHIN THE VICINITY OF BUILDINGS AND STRUCTURES OR ON INDIVIDUAL LOTS.
2. FOR AREAS THAT ARE LESS THAN 1 ACRE, THE TEST LOCATION DENSITY IS A MINIMUM OF TWO (2) TESTS.
3. FOR MULTIFAMILY HOUSING, NON-RESIDENTIAL BUILDING/STRUCTURES AND TOWNHOUSE BUILDINGS, THE TESTING BOUNDARY SHALL BE AROUND THE OUTSIDE OF EACH BUILDING/STRUCTURE.
4. RECOMMENDED SPACING FOR SOIL COMPACTION TEST LOCATION(S) IS APPROXIMATELY 1 TEST PER .5 ACRE.

TYPICAL SOIL COMPACTION: TESTING LOCATIONS NTS



NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNWARD PRESSURE USED TO ADVANCE THE WIRE.

PROBE WIRE TEST NTS



NOTE: SOIL SHOULD BE MOIST BUT NOT SATURATED. DO NOT TEST WHEN SOIL IS EXCESSIVELY DRY OR SUBJECT TO FREEZING TEMPERATURES. SLOW, STEADY DOWNWARD PRESSURE USED TO ADVANCE THE PROBE. PROBE MUST PENETRATE AT LEAST 6" WITH LESS THAN 300 PSI READING ON THE GAGE.

HANDHELD SOIL PENETROMETER TEST NTS

PROJECT INFORMATION

PROJECT NAME: 289 SQUANKUM ROAD

PROJECT LOCATION: BLOCK 49, LOT 7, 289 SQUANKUM ROAD, TOWNSHIP OF HOWELL, MONMOUTH COUNTY, NJ

OWNER: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMHOGGDALE, NJ 07727

ARCHITECT: SMITH FAMILY PROPERTIES, LLC, P.O. BOX 625, FARMHOGGDALE, NJ 07727

APPLICANT'S PROFESSIONALS

ATTORNEY: THE ACCIANO LAW OFFICES, FRANCIS C. ACCIANO, ESQUIRE, 80 WEST MAIN STREET, FRIEHOOD, NJ 07728

ARCHITECT: PARRELL ARCHITECTURAL GROUP, 494 BROADWAY, SUITE 3, LONG BRANCH, NJ 07740

SURVEYOR: CLEARPOINT SERVICES LLC, 2105 W. COUNTRY LANE ROAD, SUITE B, JACKSON, NJ 08527



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Table with columns: LICENSE, EXP. DATE, COUNTY, STATE, FIRM, ADDRESS, CITY, COUNTY, STATE, ZIP



INSITE Engineering, LLC, CERTIFICATE OF AUTHORIZATION: 246A28083200, 1913 ATLANTIC AVE., SUITE #4, WALL, NJ 07738, 732-531-7100 (PH), 732-531-7244 (FAX), insite@insiteeng.net, www.insiteeng.net

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Jason L. Fichter, P.E., P.P., C.F.M., C.M.E. N.J.P.E. #118, N.J.P.P. #728, P.A.P.E. #1988, D.C.P.E. #813, W.P.E. #0236, C.T.P.E. #23291, N.C.P.E. #3336, D.C.P.E. #00682, C.O.P.E. #6603

REVISIONS

Table with columns: No., Date, Description, Location

4 - 12/14/21 - REVISED PHASING COMMENTS
3 - 03/11/20 - REV. PER TOWNSHIP COMMENTS
2 - 01/30/19 - REV. PER TOWNSHIP COMMENTS
1 - 01/30/19 - INITIAL RELEASE

SCALE: AS SHOWN DESIGNED BY: DDC
DATE: 01/30/19 DRAWN BY: LBC
JOB #: 17-991-01 CHECKED BY: JLF
CAD ID: 17-991-01\_10

NOT FOR CONSTRUCTION
APPROVED BY: FOR CONSTRUCTION

PLAN INFORMATION

DRAWING TITLE: PRELIMINARY & FINAL MAJOR SITE PLAN

SHEET TITLE: SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS

SHEET NO.: C902