

**City of Newburyport Planning Board  
Application for SITE PLAN REVIEW**

Applicant: Sports Medicine North Orthopedic Surgery, Inc. (Applicants Agent: Conserv Group, Inc.)

Address: 110 State Road, Sagamore Beach, MA 02562

Phone: (508) 326-7873

Email: rcatignani@conservgroup.com

Property Address: 20 Henry Graf Jr. Road, Newburyport, MA 01950

Assessor's Map and Lot(s): 82-2-B Zoning District: Industrial I1

Book and Page(s) or Cert.#: B: 12598 P: 271

Type of Project:  Major  Minor  Amendment (attach previous decision)

**Project Description:**

Sports Medicine North Orthopedic Surgery, Inc. & ConServ Group Inc. proposes to develop the approximate 2-acre parcel at 20 Henry Graf Jr. Road (Assessor's Parcel 82-2-B) as a medical office use. The proposed development will consist of the construction of a 20,000 square ft. (GFA) medical office building with related site improvements including asphalt parking area and access driveway, landscaping, stormwater management facilities, utility connections and other associated infrastructure. A Special Permit from the Planning Board is required for the proposed medical office building use under the Newburyport Zoning Bylaw Section V-D - Table of Use Regulations, Use Code 215.

Engineer: McKenzie Engineering Group, Inc.

Address: 150 Longwater Drive, Suite 101, Norwell, MA 02061

Phone: (781) 792-3900

Email: bmckenzie@mckeng.com

Owner: Ocean Realty Trust, John D. Hartnett, TRS.

Address: 20 Henry Graf Jr. Road, Newburyport, MA 01950

Phone: (978) 423-0239

Owner's Signature:

*Agent: Roland H. Holman, President CG Inc  
BP: Ammass and Sales Agreement*

**City of Newburyport Planning Board  
Application for a SPECIAL PERMIT**

The undersigned hereby submits an application for:

- Special Permit
- Special Permit amendment

Petitioner: Sports Medicine North Orthopedic Surgery, Inc. (Applicants Agent: Conserv Group, Inc.)

Address: 110 State Road, Sagamore Beach, MA 02562

Phone: (508) 326-7873

Email: rcatignani@conservgroup.com

Owner: Ocean Realty Trust, John D. Hartnett, TRS.

Address: 8 Graf Road, Newburyport, MA 01950

Phone: (978) 423-0239

Site Address: 20 Henry Graf Jr. Road, Newburyport, MA 01950

Assessor's Map and Lot(s): 82-2-B Zoning District: Industrial I1

Book and Page #: B: 12598 P: 271 or Certificate of Title: \_\_\_\_\_

**Ordinance section where relief is being requested:**

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Table of Permitted Uses (V-D) | <input type="checkbox"/> Courts and Lanes (XXIII)                    |
| <input type="checkbox"/> One residential structure per lot (VI.C) | <input type="checkbox"/> Waterfront West Overlay District (XXIV)     |
| <input type="checkbox"/> Open Space Residential Development (XIV) | <input type="checkbox"/> Towle Complex Redev. Overlay District (XXV) |
| <input type="checkbox"/> Water Resource Protection District (XIX) | <input type="checkbox"/> Other _____                                 |
| <input type="checkbox"/> Federal Street Overlay District (XXII)   | (For XXVII, see DOD Special Permit Application)                      |

**Describe the Special Permit request:**

Sports Medicine North Orthopedic Surgery, Inc. & ConServ Group Inc. proposes to develop the approximate 2-acre parcel at 20 Henry Graf Jr. Road (Assessor's Parcel 82-2-B) as a medical office use. The proposed development will consist of the construction of a 20,000 square ft. (GFA) medical office building with related site improvements including asphalt parking area and access driveway, landscaping, stormwater management facilities, utility connections and other associated infrastructure. A Special Permit from the Planning Board is required for the proposed medical office building use under the Newburyport Zoning Bylaw Section V-D - Table of Use Regulations, Use Code 215.

**Petitioner and Landowner signature(s):**

Every application for a Special Permit shall be made on this form, which is the official form of the Planning Board. It shall be the responsibility of the petitioner to furnish all supporting documentation with this application. The dated copy of this application received by the City Clerk or Office of Planning and Development does not absolve the applicant from this responsibility. Failure to comply with application requirements as cited herein may result in the Planning Board dismissing the application as incomplete.

Signature of petitioner/owner: *Roland B. Catignani, President C.G. Inc.*  
*AGENT*  
Print name(s) here: ROLAND B. CATIGNANI, PRESIDENT C.G. INC.

ZONING DETERMINATION

Name: Sports Medicine North Orthopedic Surgery c/o ConServ Group Inc.

Address: 20 Henry Graf Jr Rd Zoning District(s): 11

Request: Construct a 20,000GSF 2 story Medical Office (Use 215) building and related parking, driveway and site improvements.

ZONING BOARD REVIEW REQUIRED

Variance

- Dimensional Controls (VI)
Lot Area, Open Space, Front Yard, Lot Frontage, Height, Side Yard, Lot Coverage, Lot Width, Rear Yard, Parking (VII), Modification

Sign Variance

- Signs (VIII)
Type, Size, Lighting, Location

Other

Other

Special Permit

- Table of Use Regulations (V.D) #: 215
Spacing (VI.D), In-Law Apartment (XIIA), Bonus for Multifamily Developments (XVI), Personal Wireless Communication Services (XX), Demolition Control Overlay District (XXVIII)\*, Wind Energy Conversion Facilities (XXVI), Other

Special Permit for Non-Conformities

- Extension or Alteration (IX.B.2)
Parking, Rear Yard, Upward Extension, Lot Coverage, Open Space, Side Yard, Height, Lot Frontage, Lot Area, Front Yard, Use, Over 500 sf. increase (IX.B.3.c), Plum Island Overlay District (XXI-G-3)
FAR, Height, Lot Coverage, Setbacks, Open Space

PLANNING BOARD REVIEW REQUIRED

Special Permit

- Table of Use Regulations (V-D) #
One residential structure per lot (VI.C), Open Space Residential Development (XIV), Water Resource Protection District (XIX), Federal Street Overlay District (XXII), Courts and Lanes (XXIII), Waterfront West Overlay District (XXIV), Towle Complex Redev. Overlay District (XXV), Downtown Overlay District (XXVII)\*, Other

Special Permit for Non-Conformities

- Extension or Alteration (IX.B.2)
Parking, Rear Yard, Upward Extension, Lot Coverage, Open Space, Side Yard, Height, Lot Frontage, Lot Area, Front Yard, Use, Over 500 sf. increase (IX.B.3.c)

Site Plan Review (XV)

- Major, Minor

Smart Growth District (XXIX)

- Plan Approval

HISTORICAL COMMISSION REVIEW REQUIRED

- Demo. Delay, \*Advisory Review

CONSERVATION COMMISSION REVIEW REQUIRED

Newburyport Zoning Administrator Date 2/27/2020

**20 HENRY GRAF JR RD**

**Location** 20 HENRY GRAF JR RD **MBLU** 82/ 2/B / /

**Owner** HARTNETT JOHN D. TRS. **Assessment** \$211,900

**PID** 5772 **Building Count** 1

**Assessing District**

**Current Value**

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$0	\$211,900	\$211,900

**Owner of Record**

**Owner** HARTNETT JOHN D. TRS. **Sale Price** \$100,000  
**Co-Owner** OCEAN REALTY TRUST **Certificate**  
**Address** 8 GRAF RD **Book & Page** 12598/0271  
 NEWBURYPORT, MA 01950 **Sale Date** 05/31/1994  
**Instrument** 00

**Ownership History**

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
HARTNETT JOHN D. TRS.	\$100,000		12598/0271	00	05/31/1994
MURPHY JOHN P BEVERLY A TRS	\$82,500		08581/0549	00	10/23/1986
HAYES K M & MACDONALD D	\$15,000		06975/0183	00	09/03/1982

**Building Information**

**Building 1 : Section 1**

**Year Built:**  
**Living Area:** 0

**Building Photo**

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Stories:	
Occupancy	

Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	



(<http://images.vgsi.com/photos/NewburyportMAPPhotos/default.jpg>)

**Building Layout**

([http://images.vgsi.com/photos/NewburyportMAPPhotos/Sketches/5772\\_59](http://images.vgsi.com/photos/NewburyportMAPPhotos/Sketches/5772_59))

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

**Extra Features**

Extra Features	Legend
No Data for Extra Features	

**Land**

**Land Use**

**Use Code** 4400  
**Description** IND LD DV

**Land Line Valuation**

**Size (Acres)** 2  
**Depth** 0  
**Assessed Value** \$211,900

**Outbuildings**

Outbuildings	Legend
No Data for Outbuildings	

**Valuation History**

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$0	\$211,900	\$211,900

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Professional Civil Engineering · Professional Land Surveying · Land Planning

150 Longwater Drive Suite 101  
Norwell, MA 02061  
Tel: 781-792-3900  
Fax: 781-792-0333  
[www.mckeng.com](http://www.mckeng.com)

March 17, 2020

**Via Hand-Delivery**

Newburyport Planning Board  
60 Pleasant Street  
Newburyport, MA 01950

**RE: Sports Medicine North Orthopedic Surgery, Inc.  
C/O ConServ Group, Inc.  
Supplement to Special Permit Application  
20 Henry Graf Junior Road, Newburyport, MA  
(Assessors Parcel ID 82-2-B)**

Dear Members of the Board:

On behalf of Sports Medicine North Orthopedic Surgery, Inc. and ConServ Group, Inc. (the “Applicant”), this office is pleased to submit the following supplement to the pending application for a Special Permit under Section V of the City of Newburyport Zoning Ordinance (the “Ordinance”). As the Board is aware, the Applicant seeks to construct and operate a medical office building in the Industrial I-1 Zoning District which requires a Special Permit from the Planning Board.

**Background Facts**

The project proponent, Sports Medicine North Orthopedic Surgery, Inc. and ConServ Group Inc., proposes to develop the approximate 2-acre parcel at 20 Henry Graf Jr. Road (Assessor’s Parcel 82-2-B) (the “Property”) as a medical office use. The proposed development will consist of the construction of a 20,000 square ft. (GFA) medical office building with related site

improvements including asphalt parking area and access driveway, landscaping, stormwater management facilities, utility connections and other relevant infrastructure. The site is located within the Town of Newburyport's Industrial I-1 Zoning District. The site is not located within a DEP Zone 2 or Town of Newburyport's Aquifer Protection Zone.

The Property has frontage on Henry Graf Jr. Road to the east and is bordered by developed commercial and light industrial property to the north, south and west. The parcel is currently undeveloped and is primarily devoid of vegetation. The site has historically been used as a contractor's yard with storage of heavy equipment and large stockpiles of various types of fill. The site is bounded by bordering vegetated wetlands located along all sides. The topography of the site ranges in elevation from approximately 16.5 ft. (NAVD 1988) slightly west of the center of the site to elevations of approximately 13-14 ft. (NAVD 1988) at the wetland boundaries at the perimeter of the property. The site has a municipal drainage easement located at the eastern property line along the frontage of Henry Graf Junior Road. The existing and proposed site conditions are illustrated on the Site Development Plans entitled, "Site Development Plans, 20 Henry Graf Jr. Road, Newburyport, Massachusetts" prepared by McKenzie Engineering Group, Inc. (MEG) dated March 17, 2020.

Sports Medicine North was founded in 1994 by Dr. Jeffrey Polansky who has grown the practice to include 17 specialty trained orthopedic surgeons and specialists providing services to patients throughout the region. Initially, it is anticipated that Sports medicine North practice will operate with approximately 17 medical and administrative staff for the orthopedic practice and 12 physical therapists and support physical therapy. The practice will be a single shift operation during the day.

The project is designed to minimize earthwork and comport with existing grades to the extent practicable. The neighborhood within the area is comprised primarily of light industrial uses. The proposed use will be compatible with the existing neighborhood uses. The proposed building is setback 160 feet from Henry Graf Junior Road, 25 feet from the northerly side lot line and 168 feet from the westerly rear lot line. The implementation of the project will result in a more favorable condition than the present as the site will be permanently stabilized with no potential for erosion or migration of sediments or pollutants into the downgradient bordering vegetated wetlands.

### **Satisfaction of Criteria for Approval**

The Applicant asserts that the proposed project satisfies the criteria for approval for grant of a special permit as the following conditions are satisfied:



1. The use requested is listed in the table of use regulations or elsewhere in the ordinances requiring a special permit in the district for which application is made or is similar in character to permitted uses in a particular district but is not specifically mentioned.

The proposed use is listed as Use Number 215 – Medical Office Building and requires a special permit from the Planning Board.

2. The requested use is essential and/or desirable to the public convenience or welfare.

The practice currently leases space at three locations including 1 Wallace Bashaw Jr. Way in the Newburyport Medical Building. With a lease expiring soon, the practice undertook an exhaustive search for a suitable site and eventually identified a parcel in the same industrial park that is both large enough to suit their needs and is suitably zoned. This location provides the practice with an opportunity to purchase land and relocate to a purpose-built location within the same community while developing the last open parcel in the Newburyport Industrial Park.

This location will provide their patients with access to state-of-the-art orthopedic services to enhance their patient experience, allow for increased services and future local growth and offer easier access to parking and public transportation. The City of Newburyport will benefit from higher tax revenue on the property as well as adding value to the neighboring businesses with an aesthetically pleasing building. The city will benefit by retaining Sports Medicine North as a valuable member of the Newburyport Community. The proposed location is the last open building site in the industrial park and has been used as an equipment storage and material stockpile yard by the developer as businesses relocated to the industrial park. In its current condition, the site detracts from the surrounding businesses and suffers from lack of maintenance and street presence. The proposed building will develop the last parcel of land and provide an attractive façade and landscaped lot, easy vehicle access, low traffic impact, onsite stormwater management and nominal water and sewer impact on the city. With patients primarily from Newburyport and surrounding communities, the practice will likely benefit local businesses with increased foot traffic and enhance the desirability of the industrial park by making it more people friendly. In addition, the nature of the practice is such that there is no negative noise, odor, dust, vibration or outside storage typically associated with industrial and manufacturing businesses making them the ideal neighbor.

3. The requested use will not create undue traffic congestion, or unduly impair pedestrian safety.

The Property is located on the west side of Henry Graf Junior Road approximately 1,600 feet south of the intersection of Low Street. Access to the site is proposed via a 24 ft. wide bituminous concrete driveway. All proposed drive aisles are 24-feet in width. Sidewalks are proposed adjacent to the parking areas to provide safe and convenient access and egress for patients and employees. All proposed walkways are designed to be compliant with all applicable provisions of the Mass Architectural Access Board Regulations (520 CMR) and American Disabilities Act (ADA). The proposed development includes off-street parking that complies with the requirements related to number of parking spaces and dimensions; as ninety-seven (97) dimensionally compliant parking spaces are proposed, including ten (10) van accessible spaces. Almost all of the parking spaces are located within the parking area adjacent to the front of the proposed building and main entry area.

The traffic volume anticipated as a result of the site development will result in negligible impacts on existing traffic operations on Henry Graf Jr. Road and the surrounding roadway network. Site distances at the proposed driveway intersection at Henry Graf Junior Road will exceed the requirements of the American Association of State Highway Officials as required in Sections VI-J & VI-K of the Newburyport Zoning Bylaw. The design will ensure that there will be an unobstructed sight distance along both approaches to the site on Henry Graf Junior Road, and at the included corners of the driveway for a distance sufficient to allow the operators of both vehicles approaching simultaneously to see each other in time to prevent a collision. The clear sight distance will conform to the AASHTO requirements for sight distance at at-grade intersections for passenger vehicles (Case III-Stop Control on Minor roads).

4. The requested use will not overload any public water, drainage, or sewer system or any other municipal system to such an extent that the requested use or any developed use in the immediate area or in any other area of the city will be unduly subjected to hazards affecting health, safety, or the general welfare.

The proposed medical office use will not result in any adverse impacts to the municipal infrastructure. The project will also have no impacts to the public school system.

Water supply for the development will be provided by a connection to the existing municipal water system on Henry Graf Junior Road. The domestic water service and fire service will connect to the existing 12” water main located within Henry Graf Junior Road. The water connections will be installed in accordance with the Newburyport Water Department regulations. Preliminary investigation indicates that both the volume and pressure of water in the municipal system is adequate to support the proposed development. The sewage generated by the proposed medical office building will be discharged through a gravity sewer connection to the existing municipal sewer main located on Henry Graf Jr. Road. The Department of Public Works has indicated that the proposed project will have no adverse impacts to the municipal water or sewer system.

The stormwater management system has been designed by implementing “best management practices” in order to ensure compliance with the local and Department of Environmental Protection’s (DEP) Stormwater Management Regulations. The system will attenuate peak runoff rates for statistical 2, 10, 25, and 100-year storm events to ensure that there will be no adverse impacts to downgradient properties or the municipal drainage system. Renovation of stormwater will be provided by a treatment stream consisting of parking lot maintenance and sweeping, deep sump catch basins, proprietary pre-treatment units and stormwater detention basins to mitigate the anticipated pollutant loading. The implementation of these measures will ensure that there will be no increase in post-development rates of runoff from this development

Any solid waste generated during the construction will be limited during the construction of the development. The solid waste will be disposed of in an on-site enclosed and screened dumpster, with concrete pad, for legal disposal off-site. After the construction phase, all solid waste collection within the development will be accomplished by private contractor.

5. Any special regulations for the use set forth in the special permit table, if any, are fulfilled.

The project will meet all applicable provisions of the Mass Architectural Access Board Regulations (520 CMR) and American Disabilities Act (ADA) and any other local, state and federal regulations that are relevant to the proposed medical use.

6. The requested use will not impair the integrity or character of the district or adjoining districts, not be detrimental to the health or welfare.

The proposed development of the site and building is compatible with the surrounding area and will not create adverse impacts. The medical office building is an appropriate use for the Property and the Industrial I-1 District. The surrounding development on Henry Graf Junior Road is comprised of office, commercial and light industrial uses. The proposed use will not be detrimental to the neighborhood and zoning district. The Property is an appropriate location for the proposed use as a medical office building as it is a 2± acres parcel located with accessible frontage on Henry Graf Junior Road.

The proposed Sports Medicine North facility will accommodate a staff of 29 people in a 20,000 square foot medical office building. It will be two stories each with 10,000 square feet of area. The building is designed to fit visually into the neighborhood which includes many single-story structures as well as structures with up to four or five stories.

The cornerstone practice will be Sports Medicine North, which will occupy half of the first floor and the entire second floor. The remainder of the first floor will be for prospective tenants.

The building is of simple and traditional design with a brick façade like many other structures in the area. The fenestration will be individually punched window openings of storefront design except at the main entrances, which will feature larger window openings and a suspended, protective canopy. The main entrance is centrally sited at the southeast corner of the building so as to be equally accessible by patients using either the front or the side parking lot. The rear entrance on the west side of the building will be primarily for use by employees. The building and canopy will both have flat membrane roofs and will incorporate internal roof drains, similar to most of the adjacent structures. Specific color choices of the brick façade and windows have yet to be determined. It is anticipated to be similar to adjacent structures or alternatively a subtle, light colored brick. Aluminum window finishes and storefront and spandrel glass will be selected to compliment the final brick selection. It is anticipated that building mounted signage will incorporate the business name and logo and will be visible from the south and east elevations. In addition, street address and directory signage will be placed near the street entrance and will be visible from both directions. All signage will comply with local sign codes and ordinances.

The project is designed to minimize earthwork and comport with existing grades to the extent practicable. The proposed building is setback 160 feet from Henry Graf Junior Road, 25 feet from the northerly side lot line and 168 feet from the westerly rear lot line.

The parcel is currently undeveloped and is primarily devoid of vegetation. The site has historically been used as a contractor's yard with storage of heavy equipment and large stockpiles of various types of fill. The site is currently unstabilized with bare gravel surface extending to the boundary of the bordering vegetated wetlands. The implementation of the proposed project will result in a more favorable condition than the present as the site will be permanently stabilized with no potential for erosion or migration of sediments or pollutants into the downgradient bordering vegetated wetlands.

As such, the proposed two-story building and medical office building use will be consistent with the character of the zoning district and not be detrimental to the health or integrity of the zoning district.

7. The requested use will not, by its addition to a neighborhood, cause an excess of that particular use that could be detrimental to the character of said neighborhood.

There are no other medical uses located on Henry Graf Junior Road or in the immediate vicinity of the subject parcel.

8. The proposed use is in harmony with the purpose and intent of this ordinance.

The proposed use is consistent with the purpose and intent of the Ordinance as summarized in Section I-C of the Ordinance for reasons stated herein. The project will comply with all of the dimensional requirements of Section VI Dimensional Controls of the Ordinance as well as all other provisions of the Ordinance and other local, state and federal regulations that apply to the project and proposed medical use.

9. The conduct of the proposed use will not be injurious, noxious, or offensive to the neighborhood by reason of the emission of odors, fumes, dust, smoke, noise or other cause, nor hazardous to the community on account of fire, explosion or other cause.

The proposed medical office is a relatively low-impact use that will not be injurious, noxious or offensive to the neighborhood and from an environmental standpoint will be a substantial improvement over the existing contractors yard use. The proposed use will generate relatively little traffic to the site. The proposed two-story, 20,000 square foot facility will be appropriately staffed with well trained, professional staff. Consistent with other uses in the neighborhood, deliveries and waste removal will be scheduled during

the daylight hours so as to not affect neighboring properties. The Applicant does not propose to store any hazardous chemicals on site.

The operation will comply with all local, state and federal regulations pertaining to air quality and will not cause any odors or noise pollution.

**Conclusion**

Overall, the proposed medical office building is a low-impact use within the Industrial I1 District and an appropriate use for the Property that will not have detrimental impacts. We look forward to appearing before the Board and discussing the proposed construction and operation of the facility in greater detail. We hope that this supplemental filing assists the Board in reviewing and ultimately approving the Applicant's proposed project.

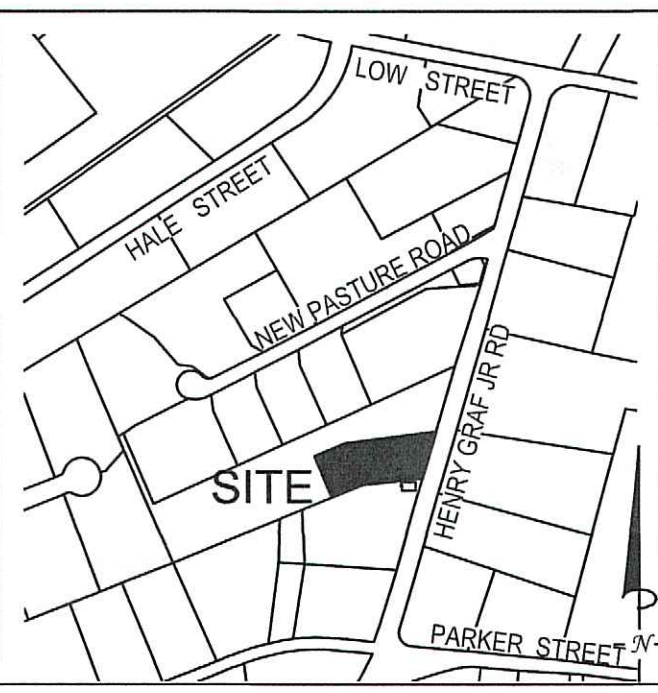
We appreciate your consideration of these matters. Please let us know if you need any additional information.

Very truly yours,

MCKENZIE ENGINEERING GROUP, INC.

Bradley C. McKenzie, P.E..

cc: ConServ Group, Inc.  
Sports Medicine North Orthopedic Surgery, Inc.

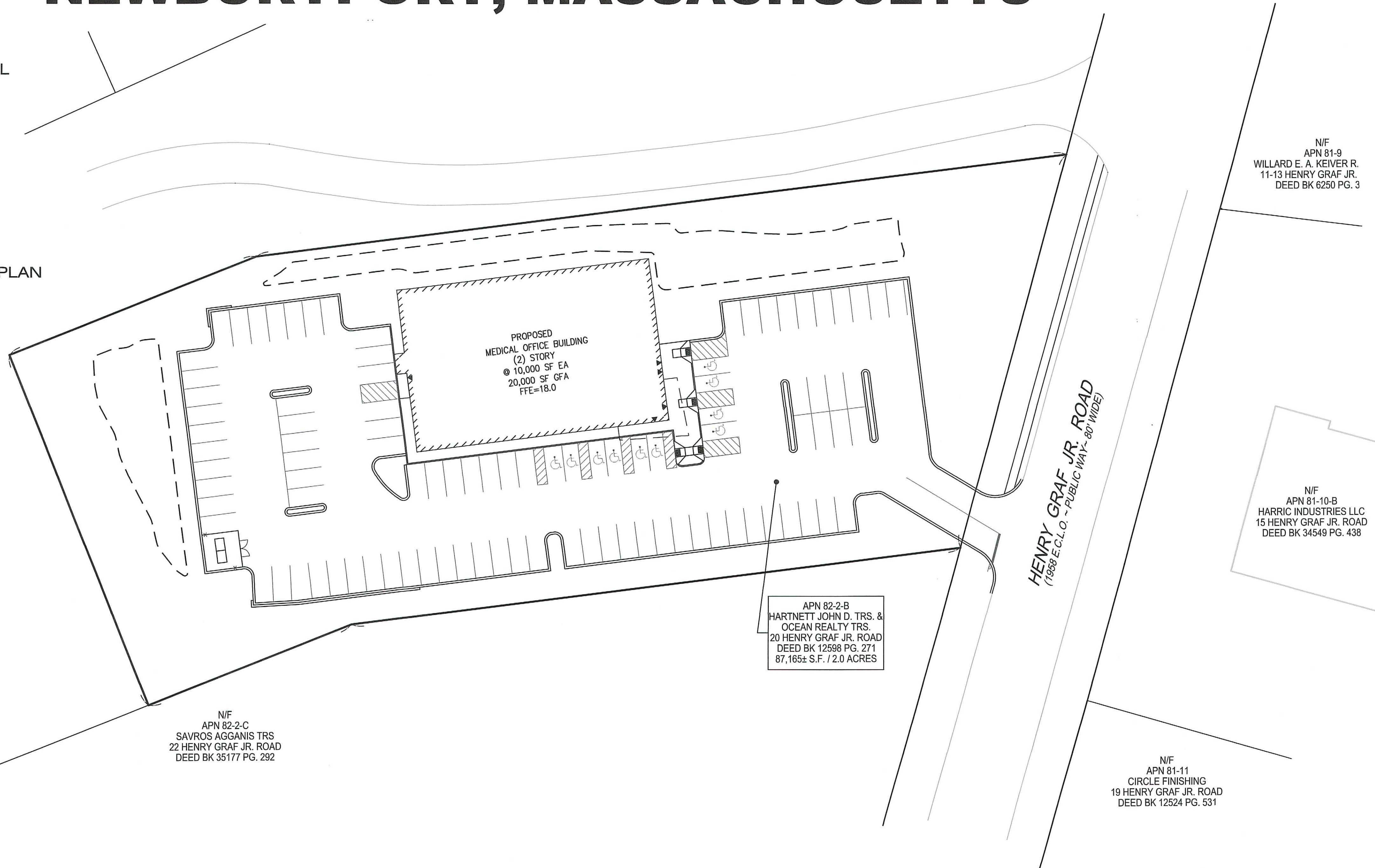


LOCUS MAP  
Not to Scale

**Drawing Index:**

No.	Drawing Title
CS-1	COVER SHEET
L-1	LEGEND, ABBREVIATIONS & GENERAL NOTES
EX-1	EXISTING CONDITIONS PLAN
C-1	SITE LAYOUT PLAN
C-2	GRADING AND DRAINAGE PLAN
C-3	UTILITY PLAN
ESC-1	EROSION AND SEDIMENT CONTROL PLAN
LA-1	LANDSCAPING PLAN
D-1 - D-5	CONSTRUCTION DETAILS

# SITE DEVELOPMENT PLANS PROPOSED MEDICAL BUILDING 20 HENRY GRAF JR. ROAD IN NEWBURYPORT, MASSACHUSETTS



N/F  
APN 82-2-1/32  
AIRPARK INDUSTRIAL CONDOMINIUM TRS.  
18 HENRY GRAF JR. ROAD  
DEED BK. 18489 PG. 142

N/F  
APN 82-2-C  
SAVROS AGGANIS TRS  
22 HENRY GRAF JR. ROAD  
DEED BK 35177 PG. 292

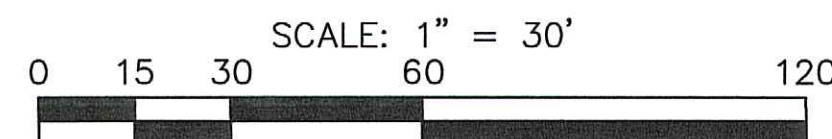
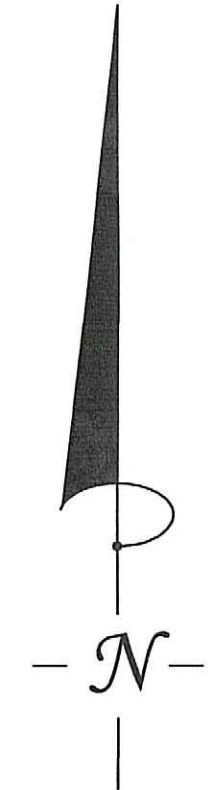
APN 82-2-B  
HARTNETT JOHN D. TRS. &  
OCEAN REALTY TRS.  
20 HENRY GRAF JR. ROAD  
DEED BK 12598 PG. 271  
87,165± S.F. / 2.0 ACRES

HENRY GRAF JR. ROAD  
(1988 E.C.L.O. - PUBLIC WAY - 80' WIDE)

N/F  
APN 81-9  
WILLARD E. A. KEIVER R.  
11-13 HENRY GRAF JR.  
DEED BK 6250 PG. 3

N/F  
APN 81-10-B  
HARRIC INDUSTRIES LLC  
15 HENRY GRAF JR. ROAD  
DEED BK 34549 PG. 438

N/F  
APN 81-11  
CIRCLE FINISHING  
19 HENRY GRAF JR. ROAD  
DEED BK 12524 PG. 531



**Owner:**  
JOHN D. HARTNETT, TRS.  
OCEAN REALTY TRS.  
8 GRAF ROAD  
NEWBURYPORT, MASSACHUSETTS 01950

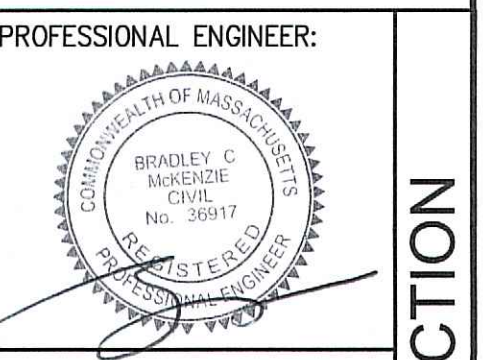
**Applicant:**  
SPORTS MEDICINE NORTH ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

**Engineer/Surveyor:**  
MCKENZIE ENGINEERING GROUP, INC.  
150 LONGWATER DRIVE  
SUITE 101  
NORWELL, MASSACHUSETTS 02061

REV	DATE	DESCRIPTION	BY	APP



**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**



APPLICANT:  
SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

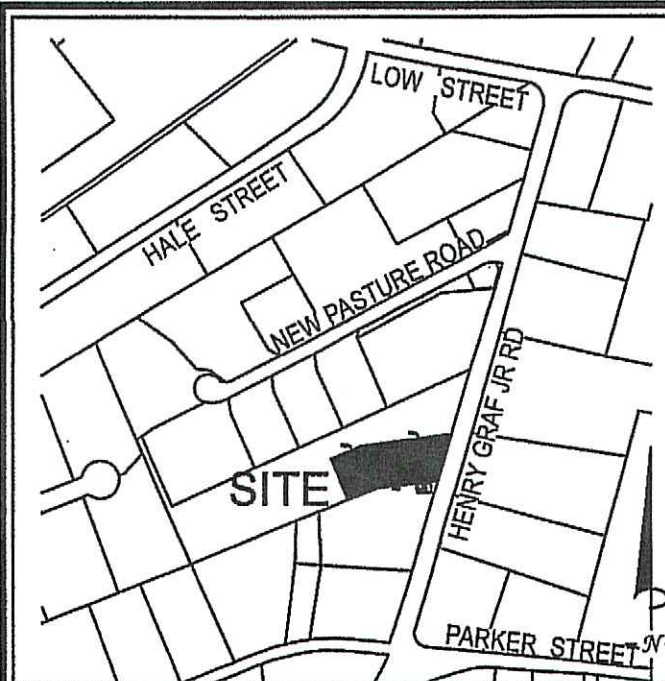
DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
SCALE: 1" = 30'  
PROJECT NO.: 219-180  
DWG. TITLE:

**COVER SHEET**

DWG. NO.: **CS-1**







LOCUS MAP  
Not to Scale

**ABBREVIATIONS**

FFE	FIRST FLOOR ELEVATION
BIT CONC.	BITUMINOUS CONCRETE PAVEMENT
CCB	CAPE COD BERM
EP	EDGE OF PAVEMENT
BC	BITUMINOUS CONCRETE CURB
(AM)	AS MEASURED
CALC	CALCULATED
RET WALL	RETAINING WALL
CONC.	CONCRETE
RCP	REINFORCED CONCRETE PIPE
VCC	VERTICAL GRANITE CURB
VCC	VERTICAL CONCRETE CURB

**LEGEND**

**SURVEY SYMBOLS**

CB/DH	REBAR
□	CONCRETE BOUND WITH DRILL HOLE
SB	STONE BOUND
SB/DH	STONE BOUND

**UTILITY SYMBOLS**

⊗	ELECTRIC HAND HOLE
⊗	GUY POLE
—GW	GUY WIRE
⊗	HVAC UNIT
⊗	TRANSFORMER
⊗	WATER GATE
⊗	ELECTRIC MANHOLE
⊗	SEWER MANHOLE
⊗	DRAIN MANHOLE
⊗	TELEPHONE MANHOLE
⊗	DRAINAGE CATCH BASIN
⊗	HYDRANT
⊗	POST INDICATOR VALVE
⊗	UTILITY POLE
⊗	YARD LIGHT
⊗	RIP RAP
⊗	BOLLARD
⊗	SIGN

**LINE DESIGNATORS**

—W	WATER MAIN
—JB	JERSEY BARRIER
—GR	GUARD RAIL
—OW	OVERHEAD WIRES
—GL	GAS LINE
—WS	WATER SERVICE
—UE	UNDERGROUND ELECTRIC
—SD	STORM DRAIN LINE
—SS	SANITARY SEWER LINE
—DS	DRAINAGE SWALE
—X	CHAIN LINK FENCE

APP	
BY	
DESCRIPTION	
DATE	
REV	

**MEG**  
MCKENZIE  
ENGINEERING GROUP

Assinippi Office Park  
150 Longwater Drive, Suite 101  
Norwell, MA 02061  
P: 781.792.3900  
F: 781.792.0333  
www.mckeng.com

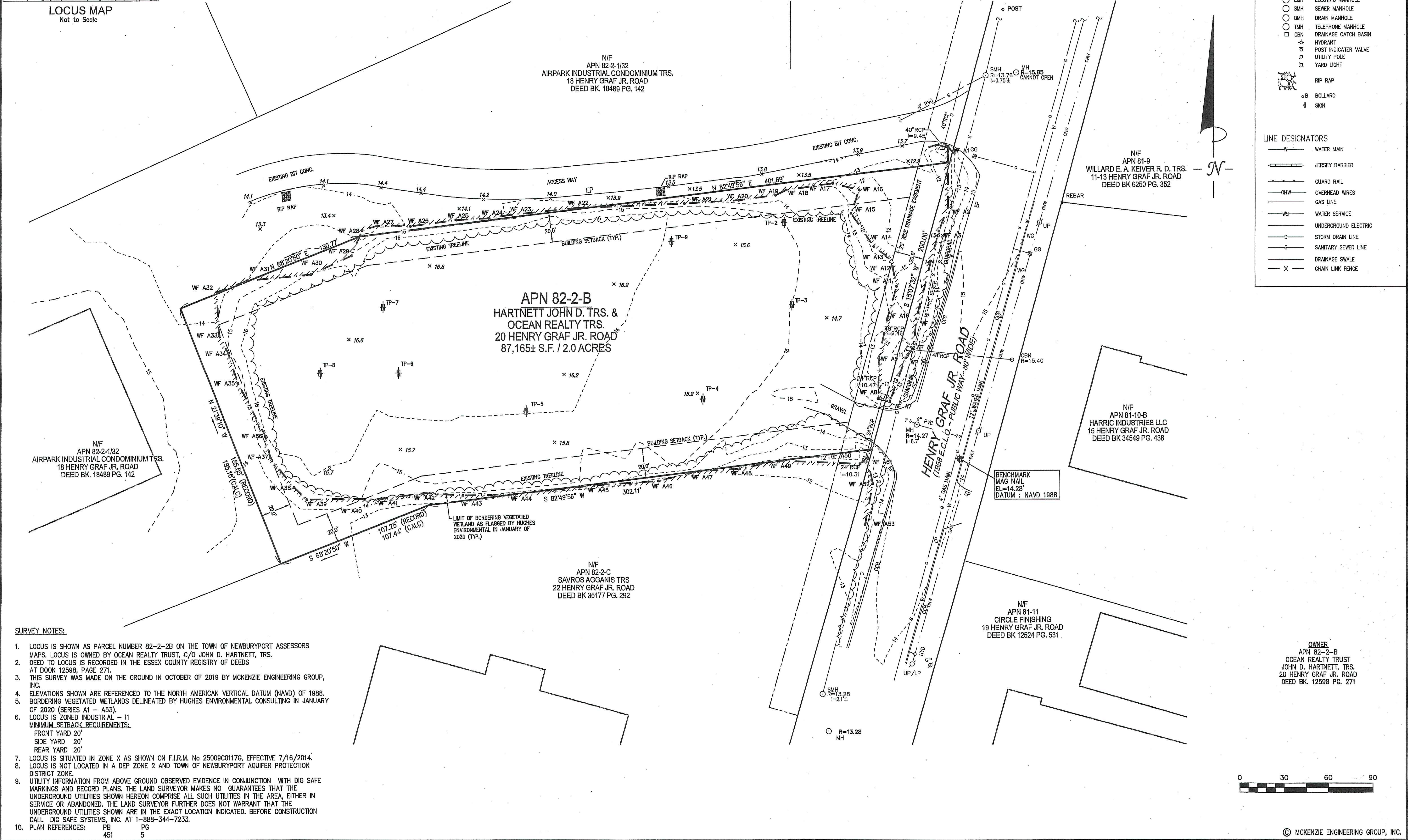
**20 HENRY GRAF JR. ROAD**  
NEWBURYPORT, MASSACHUSETTS

PROFESSIONAL SURVEYOR:  
RICHARD  
REGISTERED PROFESSIONAL LAND SURVEYOR

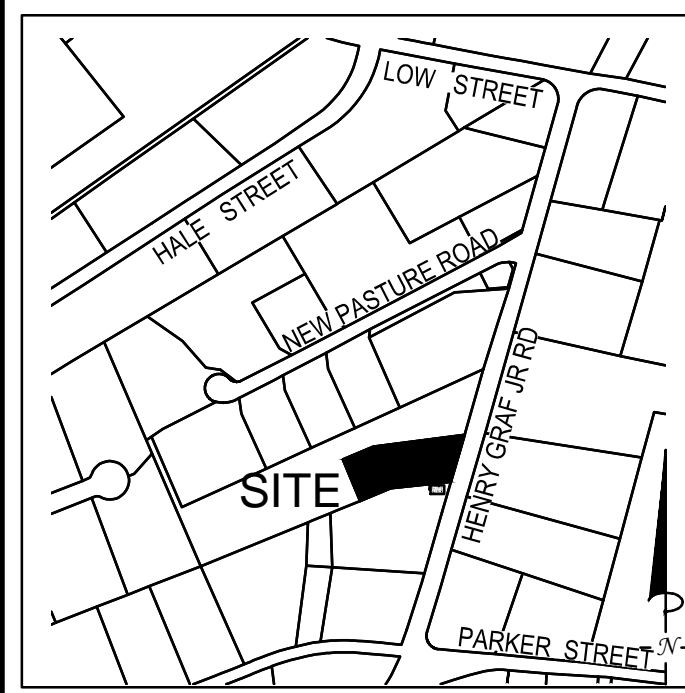
APPLICANT:  
SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS

OWNER:  
APN 82-2-B  
OCEAN REALTY TRUST  
JOHN D. HARTNETT, TRS.  
20 HENRY GRAF JR. ROAD  
DEED BK. 12598 PG. 271

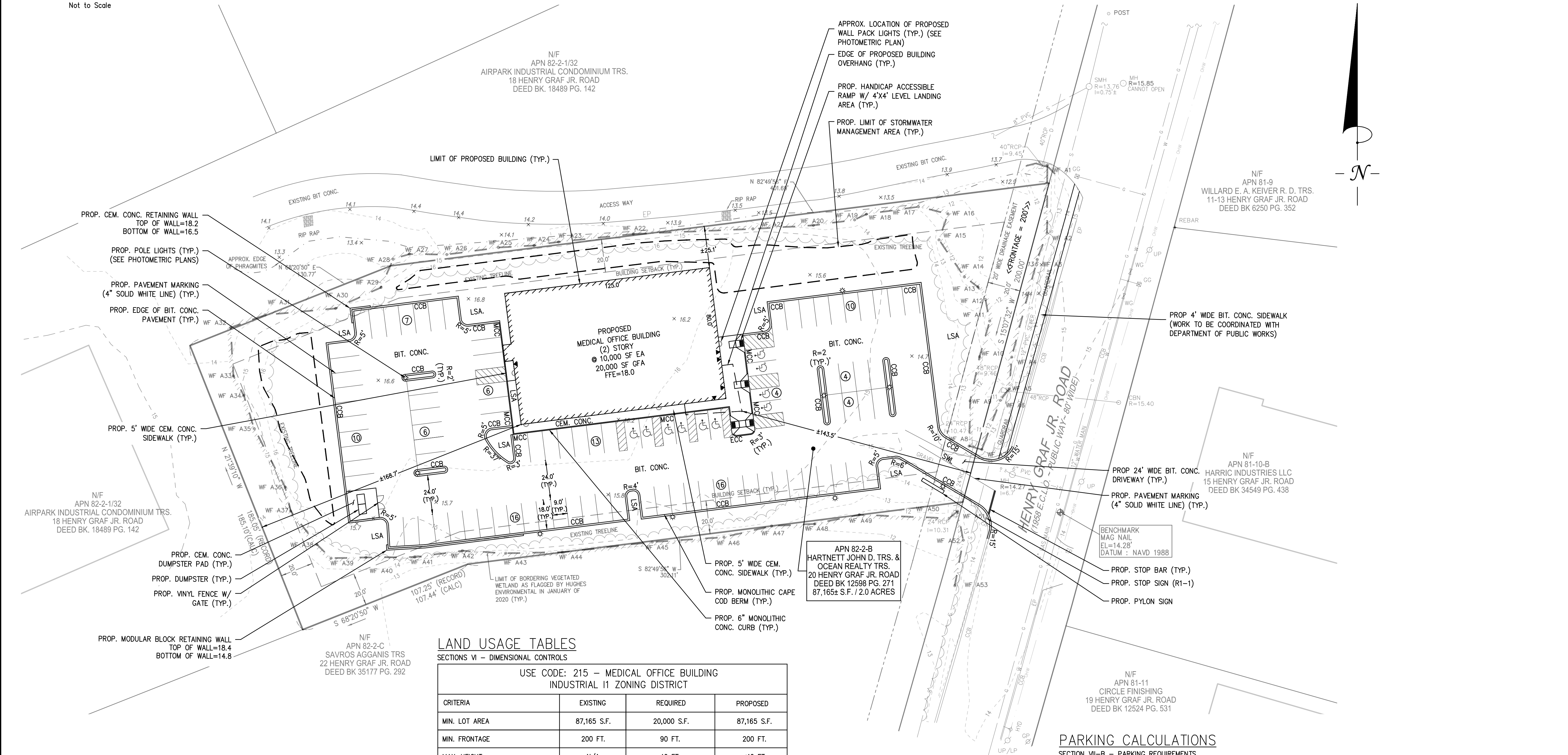
DRAWN BY: ESS  
DESIGNED BY: ---  
CHECKED BY: RTLS  
APPROVED BY: RJH  
DATE: MARCH 17, 2020  
SCALE: 1"=30'  
PROJECT NO.: 219-180  
DWG. TITLE:  
**EXISTING CONDITIONS PLAN**  
DWG. NO.:  
**EX-1**



- SURVEY NOTES:**
- LOCUS IS SHOWN AS PARCEL NUMBER 82-2-2B ON THE TOWN OF NEWBURYPORT ASSESSORS MAPS. LOCUS IS OWNED BY OCEAN REALTY TRUST, C/O JOHN D. HARTNETT, TRS.
  - DEED TO LOCUS IS RECORDED IN THE ESSEX COUNTY REGISTRY OF DEEDS AT BOOK 12598, PAGE 271.
  - THIS SURVEY WAS MADE ON THE GROUND IN OCTOBER OF 2019 BY MCKENZIE ENGINEERING GROUP, INC.
  - ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. BORDERING VEGETATED WETLANDS DELINEATED BY HUGHES ENVIRONMENTAL CONSULTING IN JANUARY OF 2020 (SERIES A1 - A53).
  - LOCUS IS ZONED INDUSTRIAL - I1. MINIMUM SETBACK REQUIREMENTS:  
FRONT YARD 20'  
SIDE YARD 20'  
REAR YARD 20'
  - LOCUS IS SITUATED IN ZONE X AS SHOWN ON F.I.R.M. No 25009C01176, EFFECTIVE 7/16/2014.
  - LOCUS IS NOT LOCATED IN A DEP ZONE 2 AND TOWN OF NEWBURYPORT AQUIFER PROTECTION DISTRICT ZONE.
  - UTILITY INFORMATION FROM ABOVE GROUND OBSERVED EVIDENCE IN CONJUNCTION WITH DIG SAFE MARKINGS AND RECORD PLANS. THE LAND SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE LAND SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. BEFORE CONSTRUCTION CALL DIG SAFE SYSTEMS, INC. AT 1-888-344-7233.
  - PLAN REFERENCES:  
PB 451 PG 5



LOCUS MAP  
Not to Scale



**LAND USAGE TABLES**

SECTIONS VI - DIMENSIONAL CONTROLS

USE CODE: 215 - MEDICAL OFFICE BUILDING INDUSTRIAL I1 ZONING DISTRICT			
CRITERIA	EXISTING	REQUIRED	PROPOSED
MIN. LOT AREA	87,165 S.F.	20,000 S.F.	87,165 S.F.
MIN. FRONTAGE	200 FT.	90 FT.	200 FT.
MAX. HEIGHT	N/A	40 FT.	<40 FT.
MAX. % LOT COVERAGE	N/A	50%	12.0%
OPEN SPACE	N/A	N/A	N/A
MIN. FRONT YARD	N/A	20 FT.	±143.5 FT.
MIN. SIDE YARD	N/A	20 FT.	±25.1 FT.
MIN. REAR YARD	N/A	20 FT.	±168.7 FT.

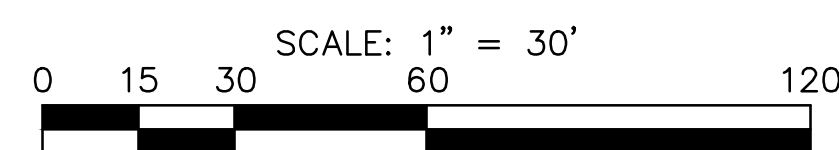
NOTES:  
1. SECTION XV-Hd.1. - A LANDSCAPED BUFFER STRIP AT LEAST 20' IN WIDTH SHALL BE ESTABLISHED ADJACENT TO ANY PUBLIC ROAD.  
2. SECTION XV-Hd.4. - AT LEAST 5% OF THE INTERIOR OF THE PARKING AREA SHALL BE MAINTAINED WITH LANDSCAPING, INCLUDING TREES, IN LANDSCAPE ISLANDS OR PLOTS OF AT LEAST NINE FEET IN WIDTH WITH NO MORE THAN 20 PARKING SPACES BETWEEN EACH ISLAND OR PLOT. (5.1% PROVIDED BY THIS SUBMISSION)

**PARKING CALCULATIONS**

SECTION VII-B - PARKING REQUIREMENTS

CRITERIA	REQUIRED (NEWBURYPORT ZONING ORDINANCE)	REQUIRED	PROPOSED
USE CODE 215: MEDICAL OFFICE BUILDING	1 SPACE/2 EMPLOYEES = 40 EMPLOYEES/2 EMPLOYEES PER SPACE = 20 SPACES 1 SPACE/300 SF GFA = 20,000 SF. GFA/300 SF GFA PER SPACE = 67 SPACES 20 + 67 = 87 SPACES	87 SPACES	96 SPACES

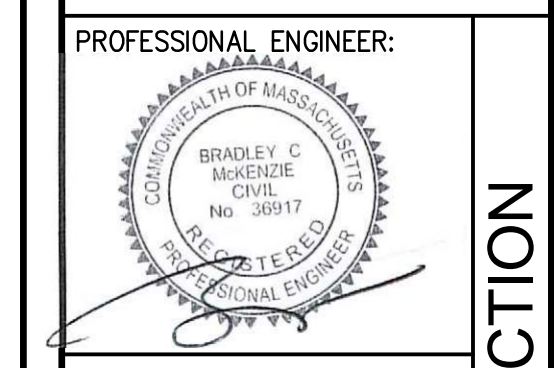
PARKING NOTES:  
1. SPECIALIZED MEDICAL FACILITIES: OUTPATIENT UNITS AND FACILITIES: 10% OF THE TOTAL NUMBER OF PARKING SPACES PROVIDED TO SERVE EACH SUCH OUTPATIENT UNIT OR FACILITY SHALL BE ACCESSIBLE (521 CMR: ARCHITECTURAL ACCESS BOARD).  
2. 96 TOTAL SPACES INCLUDES 10 AAB ACCESSIBLE 9' X 18' WITH 4 - 8' X 18' ACCESS AREA (VAN ACCESSIBLE SPACE) (521 CMR: ARCHITECTURAL ACCESS BOARD) ACCESSIBLE SPACES REQUIRED = 10 (10% OF 96 TOTAL SPACES)



REV	DATE	DESCRIPTION	BY	APP



**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**



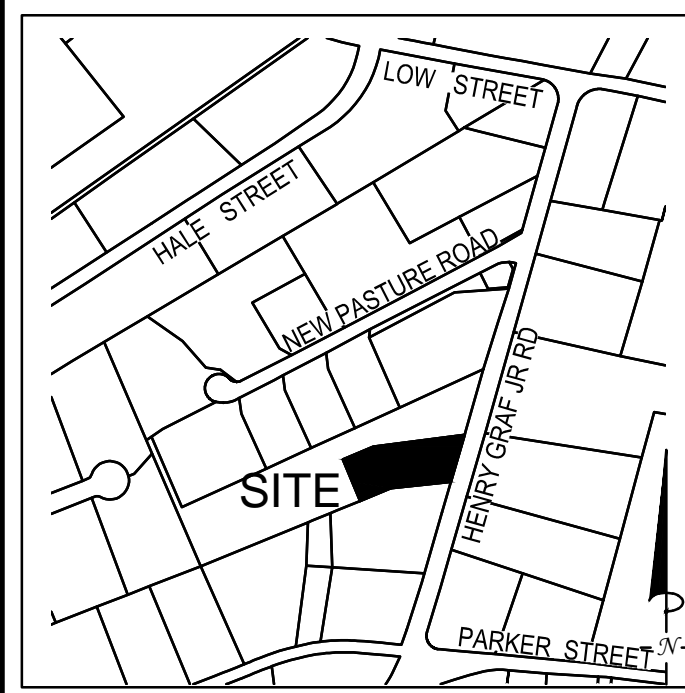
APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
SCALE: 1" = 30'  
PROJECT NO.: 219-180  
DWG. TITLE:

**SITE LAYOUT  
PLAN**

DWG. NO.: **C-1**





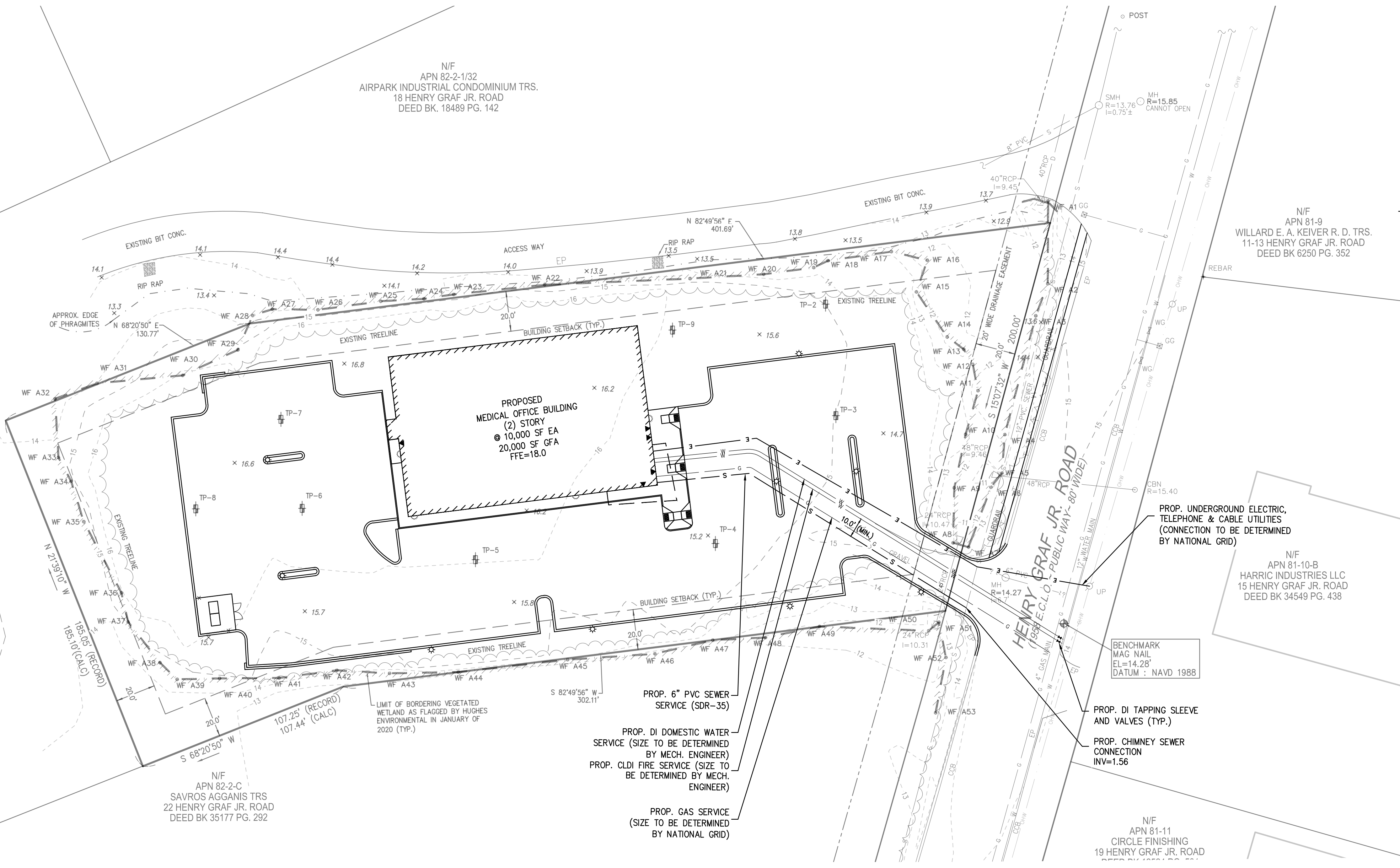
LOCUS MAP  
Not to Scale

N/F  
APN 82-2-1/32  
AIRPARK INDUSTRIAL CONDOMINIUM TRS.  
18 HENRY GRAF JR. ROAD  
DEED BK. 18489 PG. 142

N/F  
APN 81-9  
WILLARD E. A. KEIVER R. D. TRS.  
11-13 HENRY GRAF JR. ROAD  
DEED BK 6250 PG. 352

N/F  
APN 81-10-B  
HARRIC INDUSTRIES LLC  
15 HENRY GRAF JR. ROAD  
DEED BK 34549 PG. 438

N/F  
APN 81-11  
CIRCLE FINISHING  
19 HENRY GRAF JR. ROAD



N/F  
APN 82-2-1/32  
AIRPARK INDUSTRIAL CONDOMINIUM TRS.  
18 HENRY GRAF JR. ROAD  
DEED BK. 18489 PG. 142

N/F  
APN 82-2-C  
SAVROS AGGANIS TRS  
22 HENRY GRAF JR. ROAD  
DEED BK 35177 PG. 292

- PROP. 6" PVC SEWER SERVICE (SDR-35)
- PROP. DI DOMESTIC WATER SERVICE (SIZE TO BE DETERMINED BY MECH. ENGINEER)
- PROP. CLDI FIRE SERVICE (SIZE TO BE DETERMINED BY MECH. ENGINEER)
- PROP. GAS SERVICE (SIZE TO BE DETERMINED BY NATIONAL GRID)

PROP. UNDERGROUND ELECTRIC, TELEPHONE & CABLE UTILITIES (CONNECTION TO BE DETERMINED BY NATIONAL GRID)

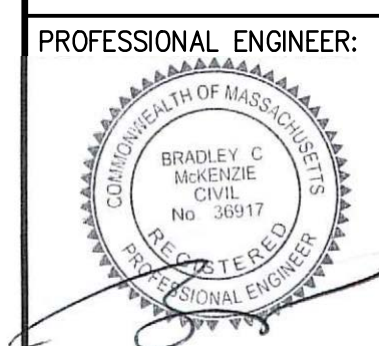
BENCHMARK  
MAG NAIL  
EL=14.28'  
DATUM : NAVD 1988

PROP. DI TAPPING SLEEVE AND VALVES (TYP.)  
PROP. CHIMNEY SEWER CONNECTION  
INV=1.56

REV	DATE	DESCRIPTION	BY	APP



**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

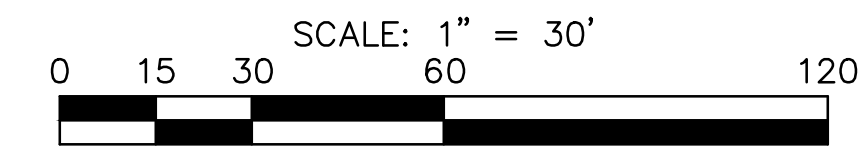


APPLICANT:  
SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

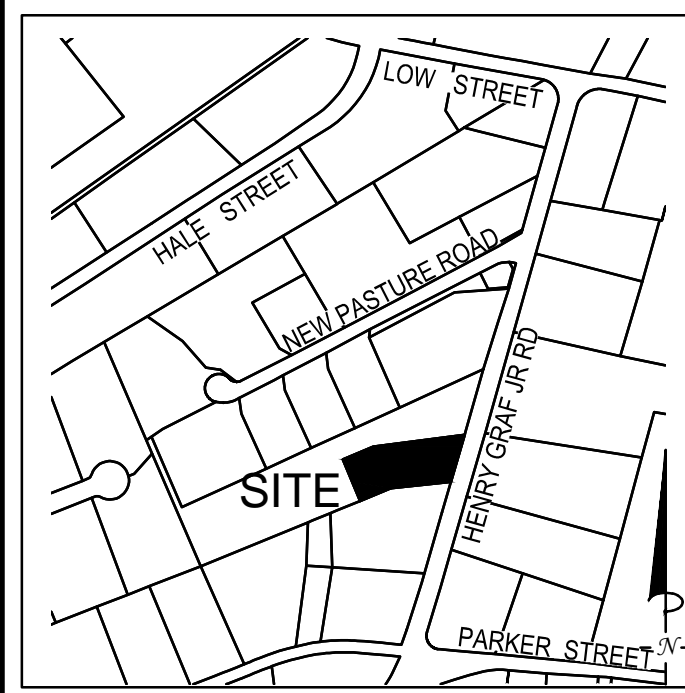
DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
SCALE: 1" = 30'  
PROJECT NO.: 219-180  
DWG. TITLE:

**UTILITY PLAN**

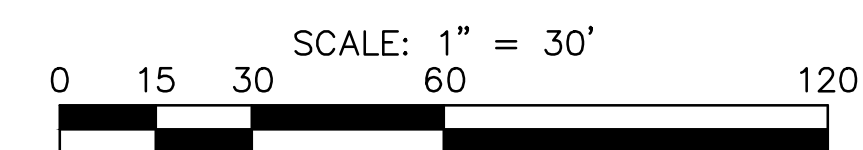
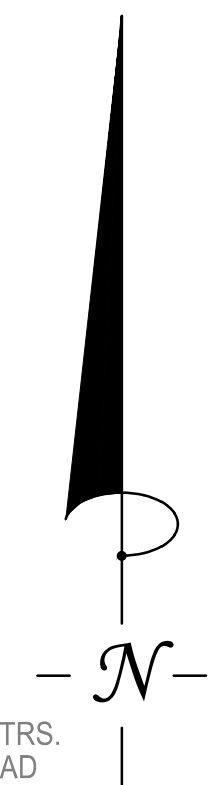
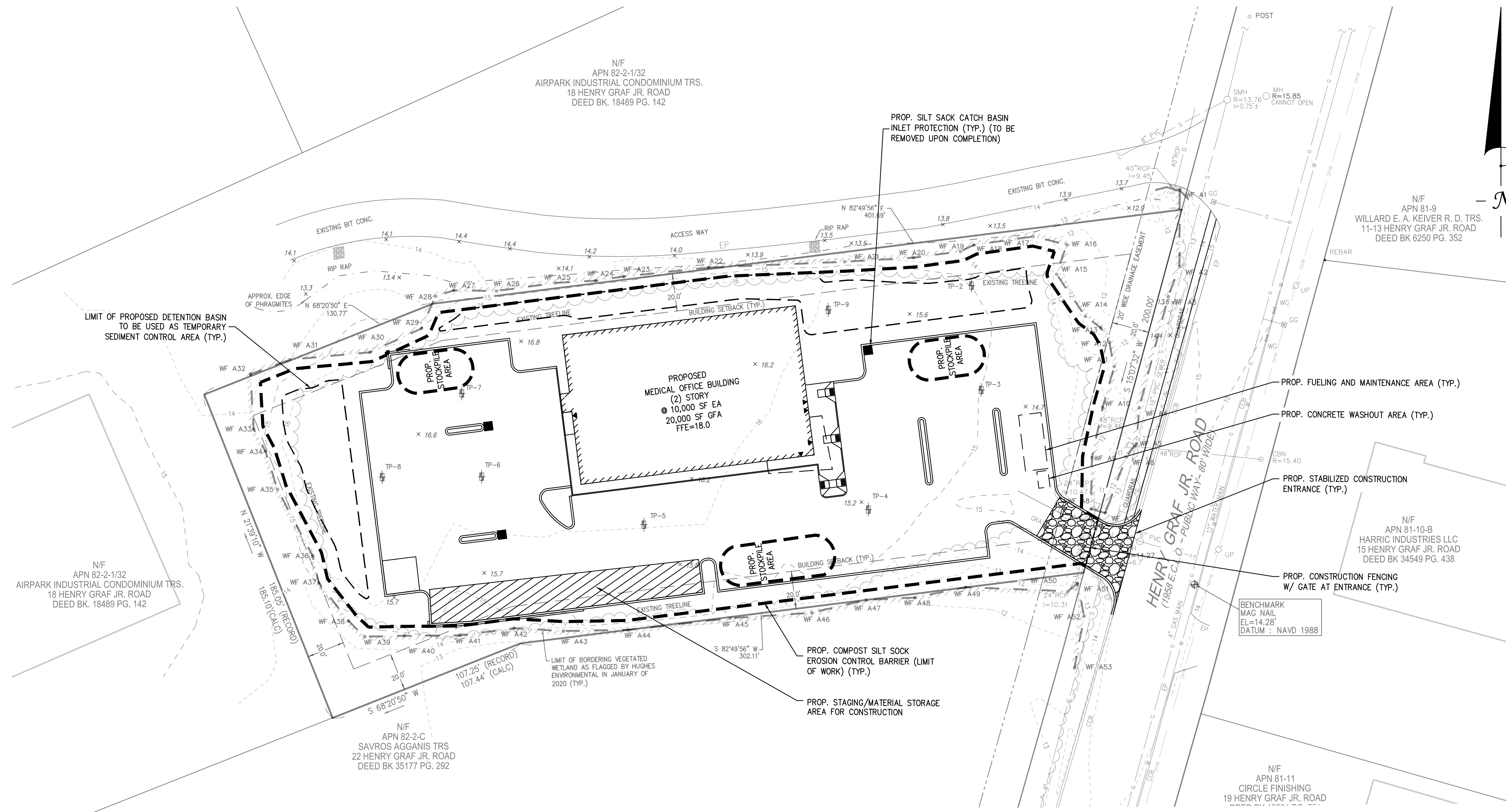
DWG. NO.:  
**C-3**



NOT FOR CONSTRUCTION



LOCUS MAP  
Not to Scale



REV	DATE	DESCRIPTION	BY	APP

**MG**  
MCKENZIE  
ENGINEERING GROUP

Mississippi Office Park  
150 Longwater Drive, Suite 101  
Norwell, MA 02061  
P: 781.792.3900  
F: 781.792.0333  
www.mckeng.com

**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

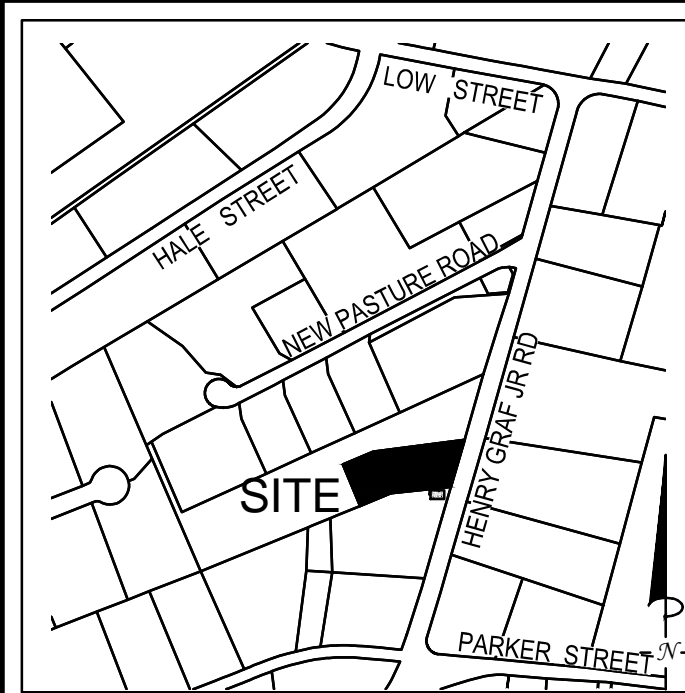
APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
SCALE: 1" = 30'  
PROJECT NO.: 219-180  
DWG. TITLE:

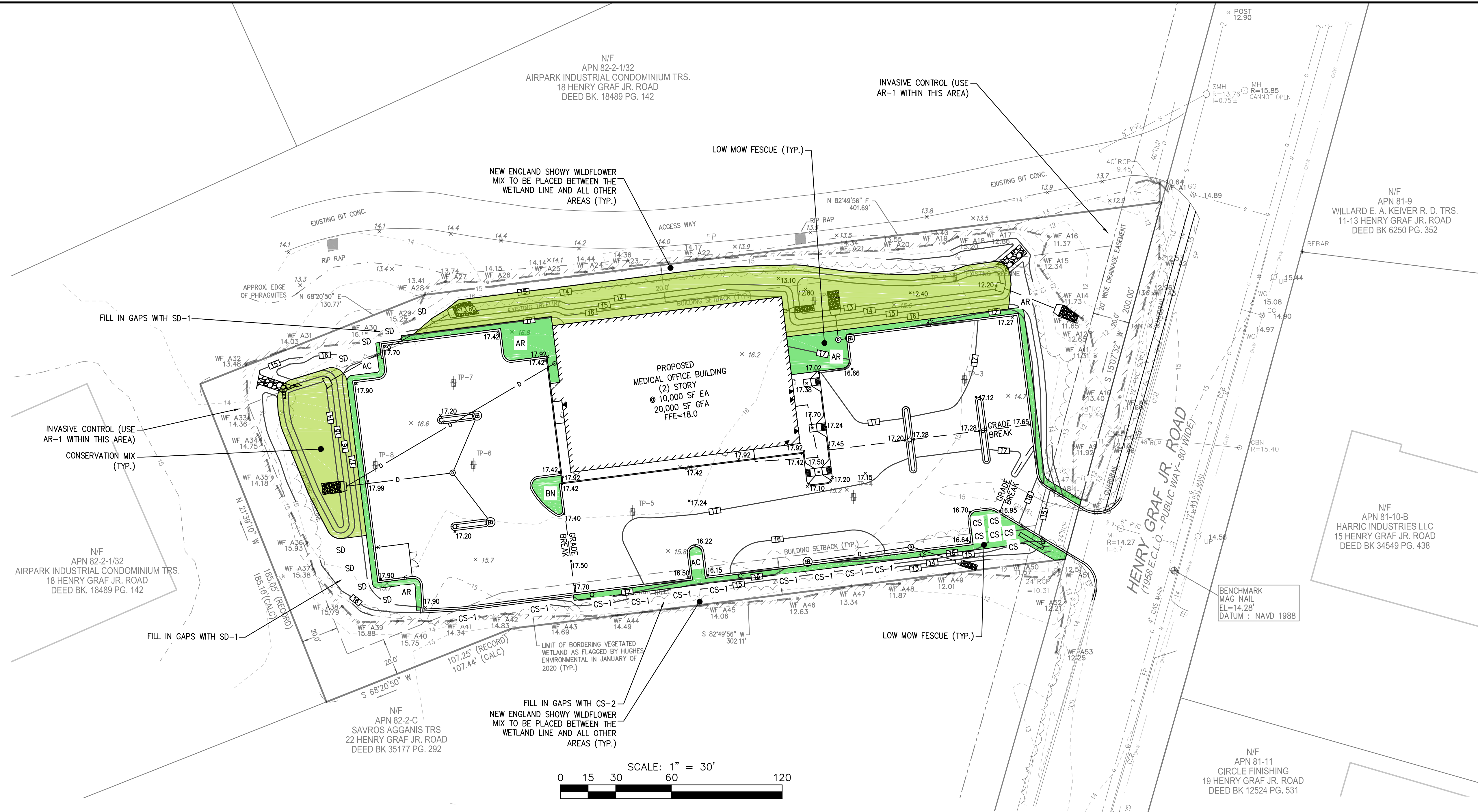
**EROSION AND  
SEDIMENT  
CONTROL PLAN**

DWG. NO.: **ESC-1**

**NOT FOR CONSTRUCTION**



LOCUS MAP  
Not to Scale



SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
<b>TREES</b>					
AR	4	ACER RUBRUM	RED MAPLE	3 - 3.5" CAL.	
AR-1	6	ACER RUBRUM	RED MAPLE	1 - 1.5" CAL.	IN INVASIVE CONTROL AREA
BN	1	BETULA NIGRA 'DURA HEAT'	DURA HEAT RIVER BIRCH	10 - 12- HEIGHT	MULTI-STEM 3-5 STEM
<b>SHRUBS/SMALL TREES</b>					
SD	8	SALIX DISCOLOR	PUSSY WILLOW	1 - 1.5" CAL.	
SD-1	30	SALIX DISCOLOR	PUSSY WILLOW	TUBLINGS	FILL IN CAPS, AND IN INVASIVE CONTROL AREAS
AC	2	AMELANCHIER CANADENSIS	SERVICEBERRY	2 - 2.5" CAL.	
CS	6	CORNUS SERICIA	REDOSIER DOGWOOD	5 GAL	4' TRIA. SPACING
CS-1	10	CORNUS SERICIA	REDOSIER DOGWOOD	3-4'	6' ON CENTER, NEWP SOURCE AS SHOWN AND IN INVASIVE CONTROL AREA
CS-2	60	CORNUS SERICIA	REDOSIER DOGWOOD	TUBLINGS	FILL IN GAPS, NEWP SOURCE
<b>SEED MIX</b>					
		LOW MOW FESCUE			AREAS NEAR BUILDING FOR MANICURED LOOK AND AREAS FOR VEHICLE OVERHANG
		NEW ENGLAND SHOWY WILDFLOWER MIX			SLOPES AND AREAS OUTSIDE BASINS
		CONSERVATION MIX			BASINS/SWALES

**PLANTING TABLE**

	CONSERVATION MIX
	LOW MOW FESCUE

REV	DATE	DESCRIPTION	BY	APP



**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
 110 STATE ROAD  
 SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
 DESIGNED BY: ESS  
 CHECKED BY: BCM  
 APPROVED BY: BCM  
 DATE: MARCH 17, 2020  
 SCALE: 1" = 30'  
 PROJECT NO.: 219-180  
 DWG. TITLE:

**LANDSCAPING PLAN**

DWG. NO.: **LA-1**

NOT FOR CONSTRUCTION

- NOTES:
- ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
  - PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
  - JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
  - CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

**Hydro**  
International  
Stormwater Solutions  
94 Hutchins Drive  
Portland, Maine 04102  
Tel: (207) 756-6200  
Fax: (207) 756-6212  
stormwaterinquiry@hydro-int.com

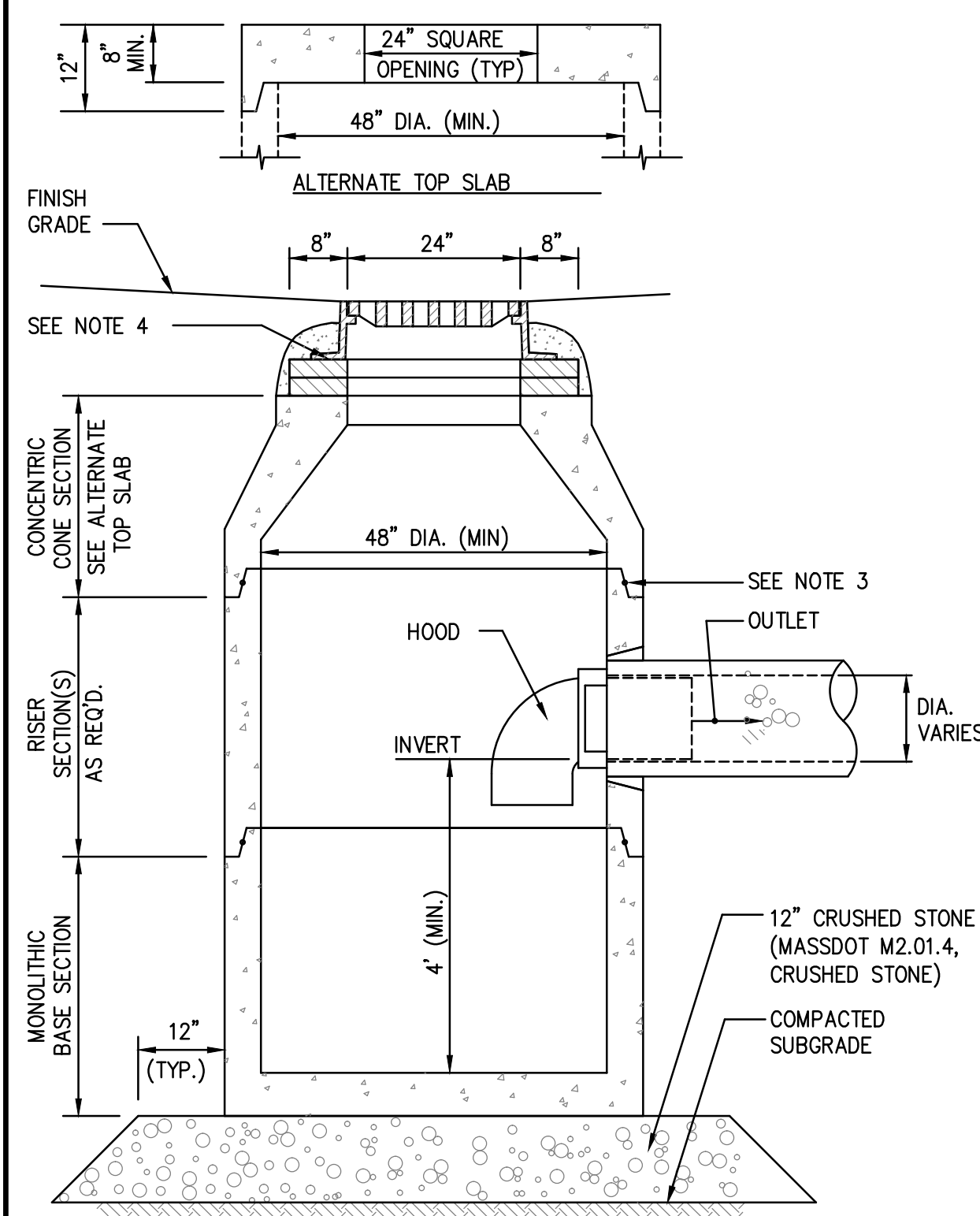
MANHOLE WALL AND SLAB THICKNESS ARE NOT TO SCALE.

CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.

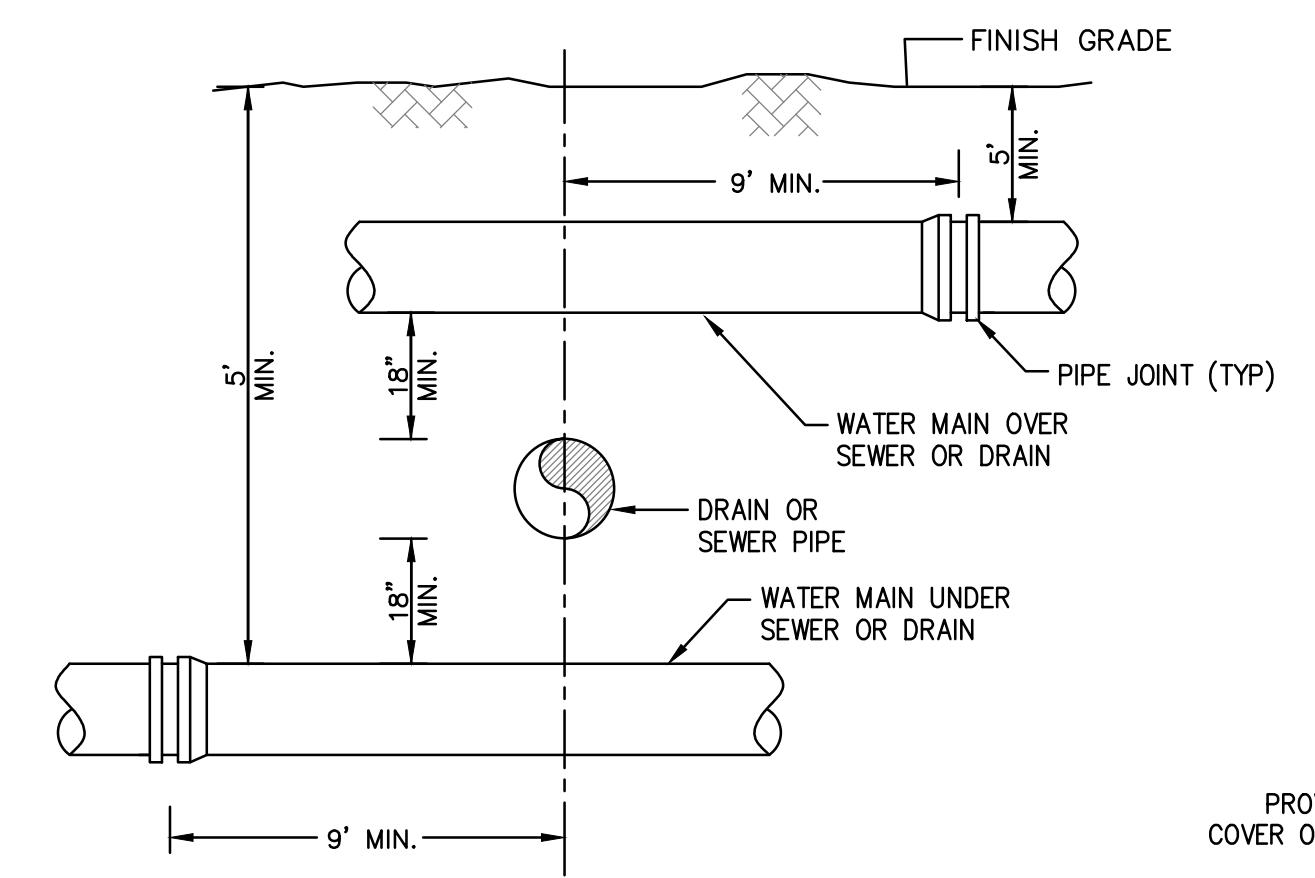
CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASING UNIT TO FABRICATION.

Parts List			
ITEM	QTY.	DESCRIPTION	SIZE (in)
1	3	I.D. CONCRETE MANHOLE	36
2	3	INLET CHUTE (W/ FLOATABLES TRAP)	
3	3	OUTLET CHUTE	
4	3	INLET PIPE (BY OTHERS)	12
5	3	OUTLET PIPE (BY OTHERS)	12
6	3	HIGH FLOW BYPASS	
7	3	FRAME AND COVER (OR GRATE)	

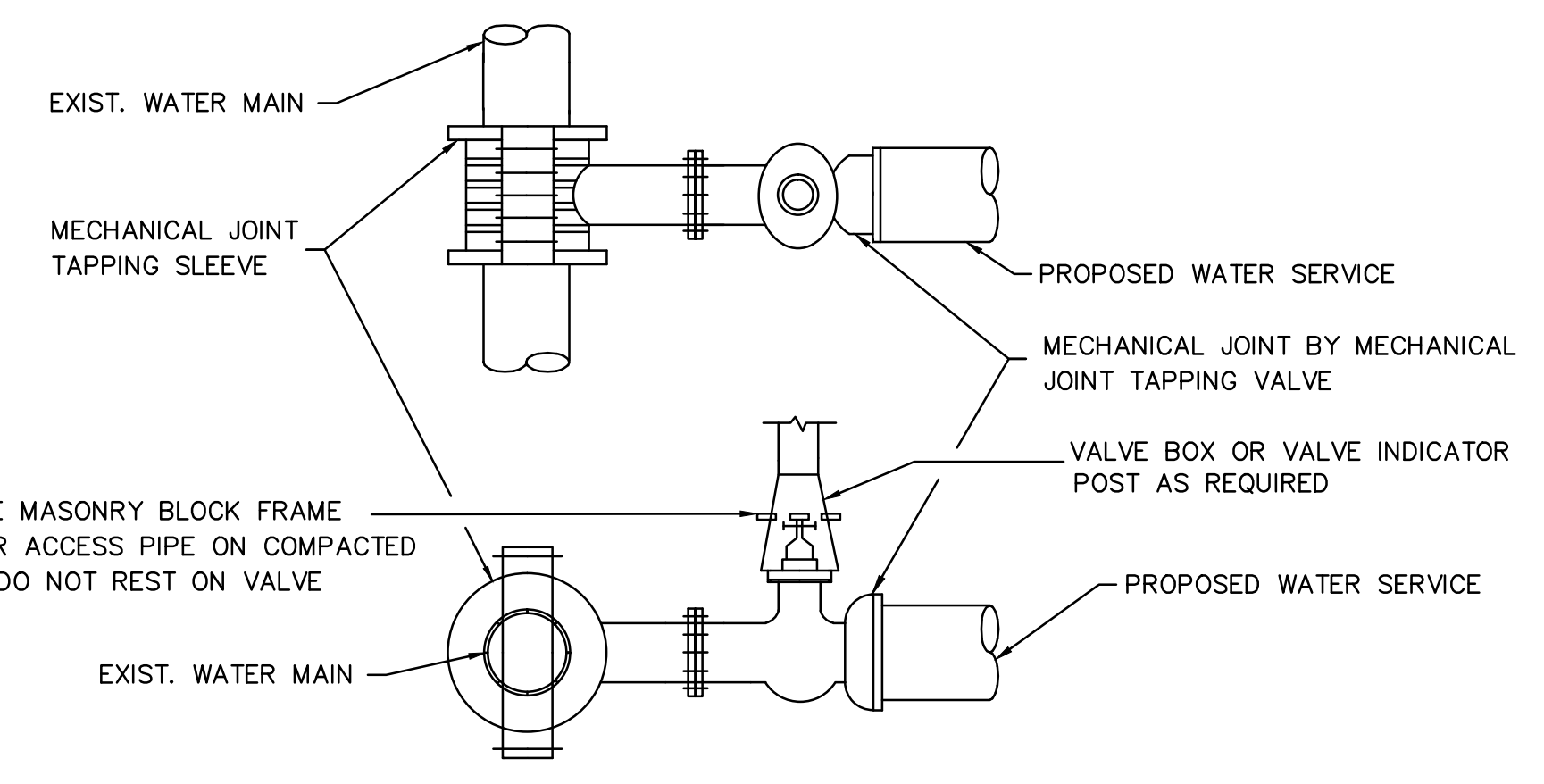
3' DIAMETER FIRST DEFENSE UNIT (FD-3HC)  
N.T.S.



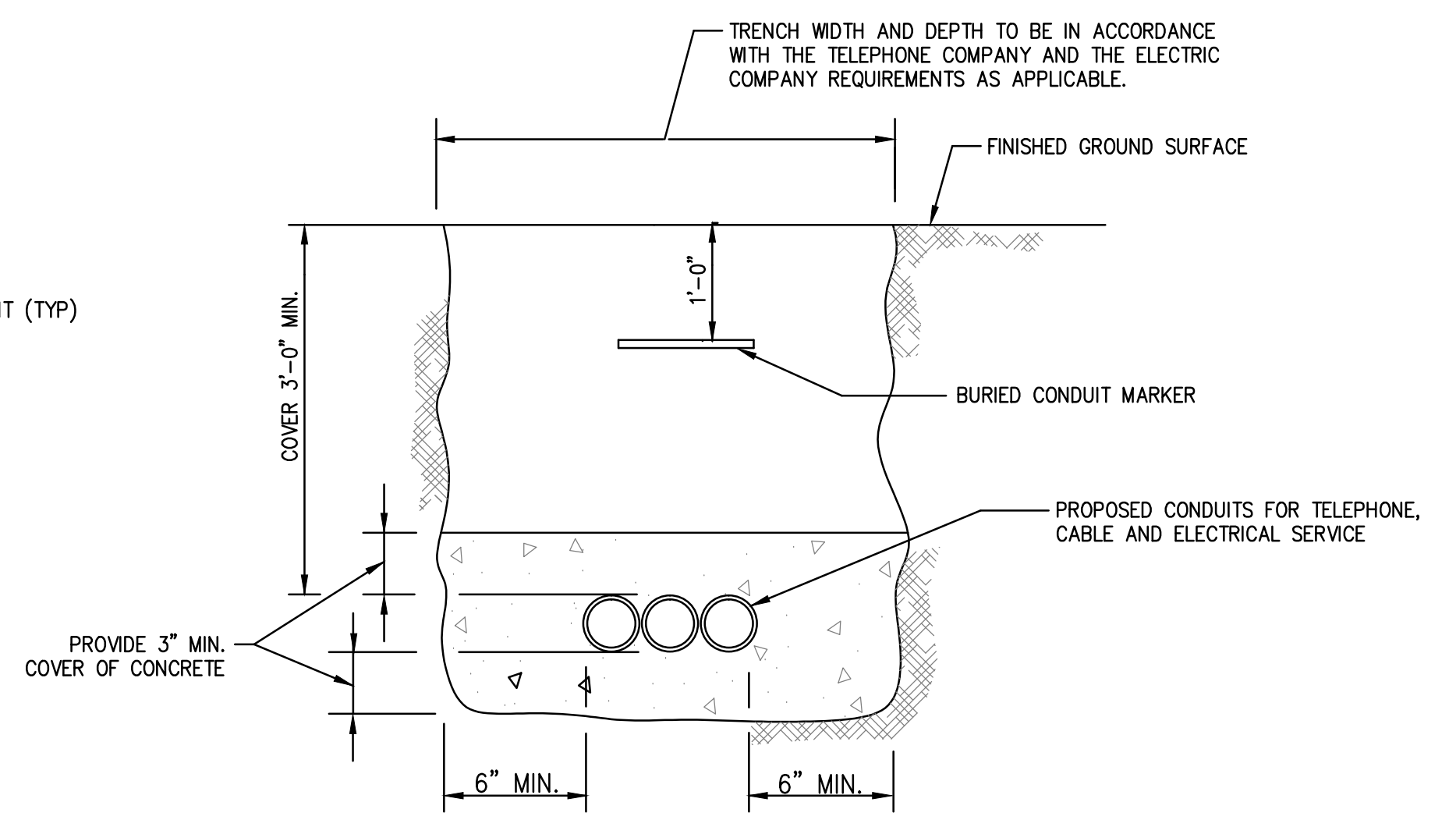
CATCH BASIN W/HOOD  
SCALE: N.T.S.



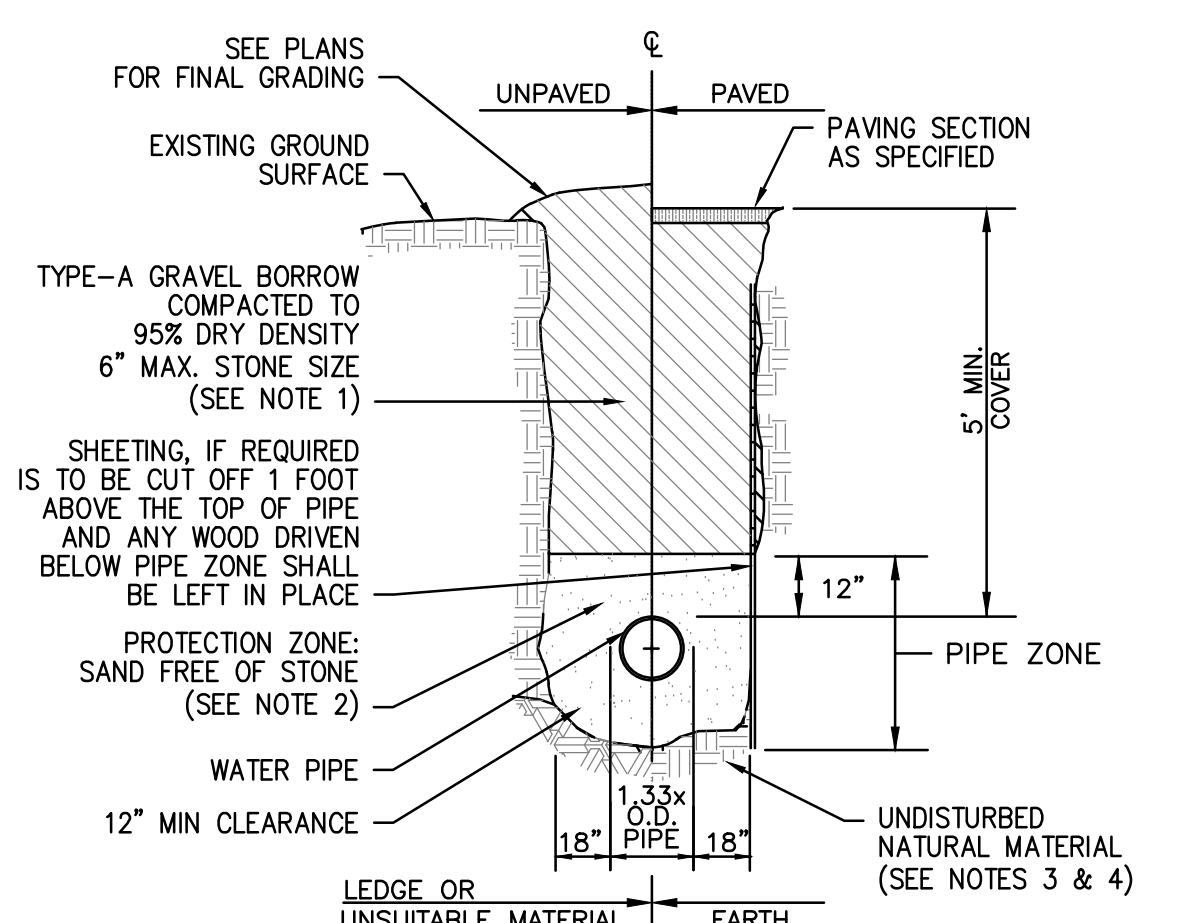
SEWER OR DRAIN CROSSING DETAIL  
N.T.S.



TYPICAL TAPPING SLEEVE AND VALVE  
SCALE: N.T.S.

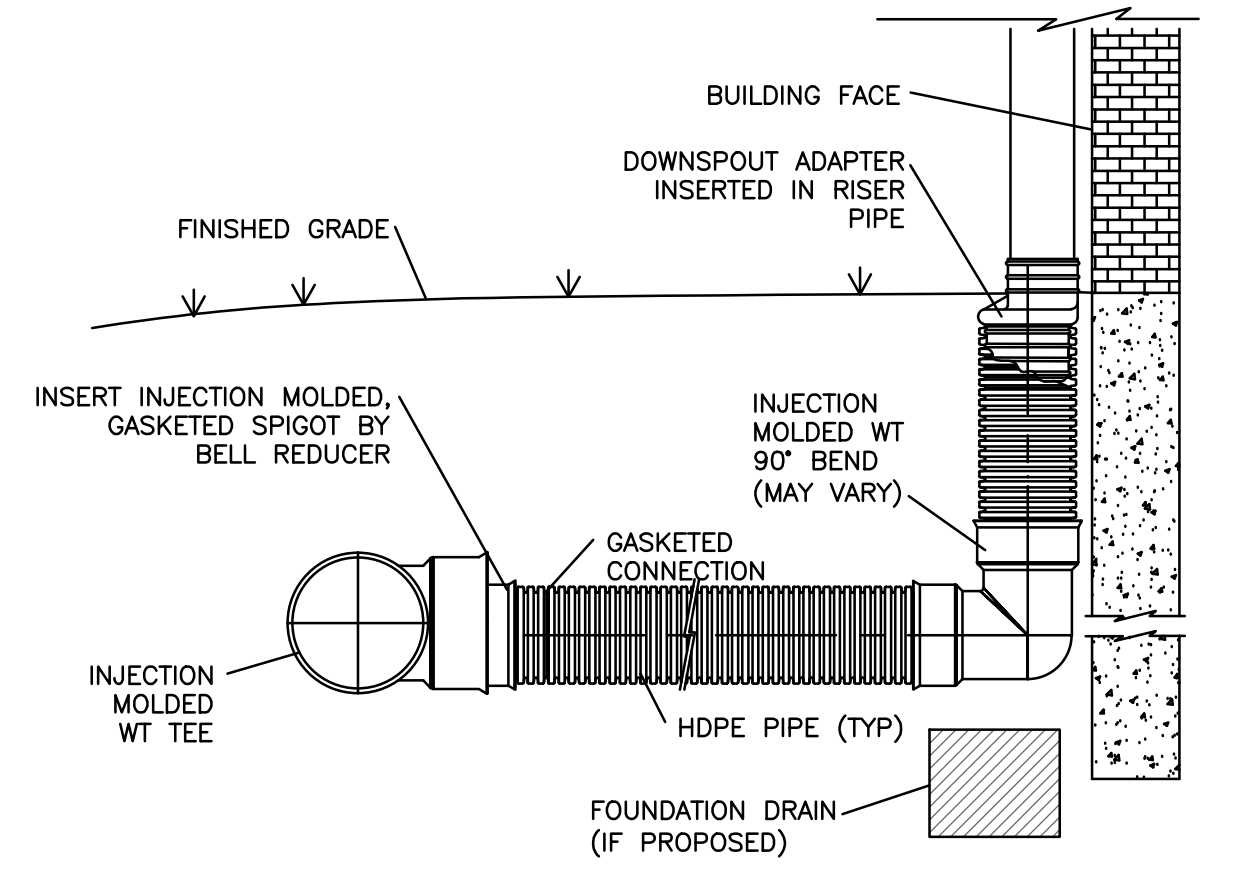


TYPICAL ELECTRIC/TELEPHONE/CABLE CONDUIT  
(US-UTILITY SERVICE)  
SCALE: N.T.S.



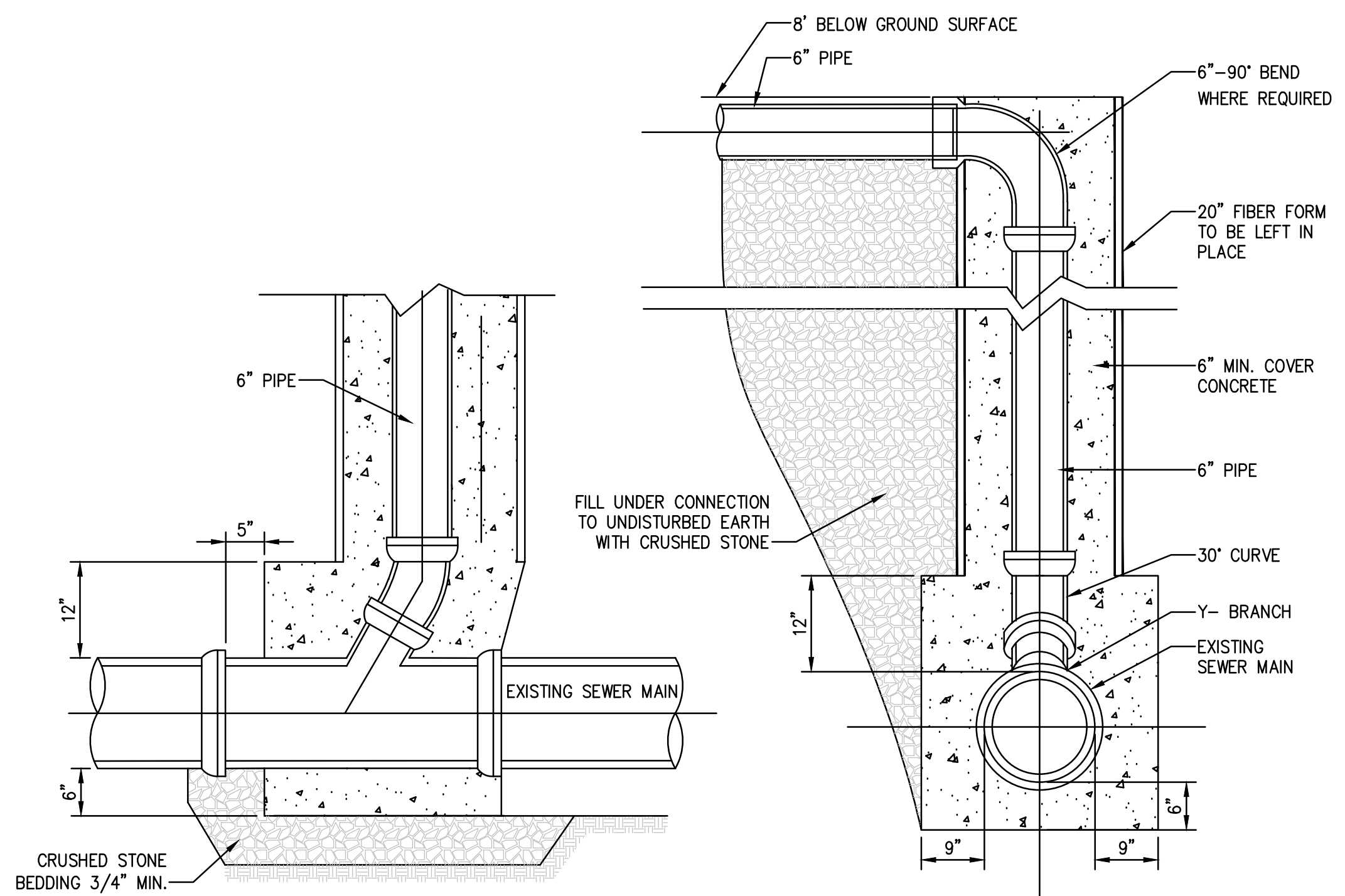
- NOTES:
- GRAVEL BORROW SHALL CONFORM TO MASSDOT SPECIFICATION M1.03.0.
  - SAND BEDDING SHALL CONFORM TO MASSDOT SPECIFICATIONS.
  - SUBGRADE SHALL CONSIST OF NATIVE SOIL OR IMPORTED SOIL CONFORMING TO THE MASSDOT SPECIFICATION FOR ORDINARY BORROW AND SHALL BE FREE OF ANY UNSUITABLE SOILS OR MATERIAL.
  - UNUSABLE SOIL OR MATERIAL SHALL INCLUDE BUT NOT BE LIMITED TO PEAT, MUCK, BROKEN PAVEMENT, STUMPS, LOGS, CONSTRUCTION DEBRIS OR ANY OTHER DELETERIOUS MATERIAL.

TYPICAL WATER TRENCH DETAIL  
SCALE: N.T.S.

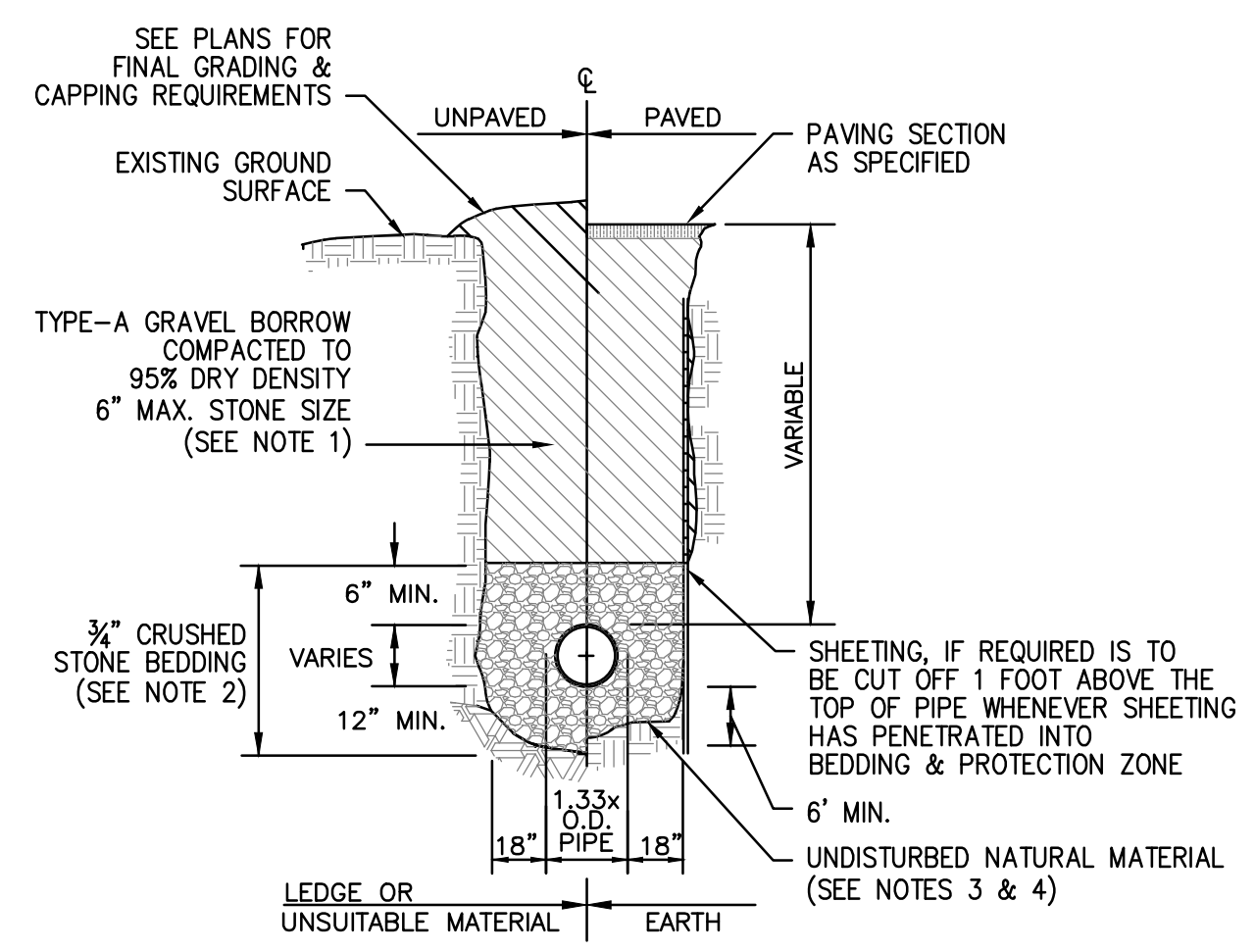


- NOTE:
- INJECTION MOLDED FITTING ARE AVAILABLE IN TEES, WYES, REDUCERS, 45° BENDS AND BELL/BELL COUPLERS.
  - WATERTIGHT (WT) JOINTS SHOWN. SOIL-TIGHT (ST) FITTINGS ARE ALSO AVAILABLE.

ROOF LEADER CONNECTION DETAIL  
SCALE: N.T.S.

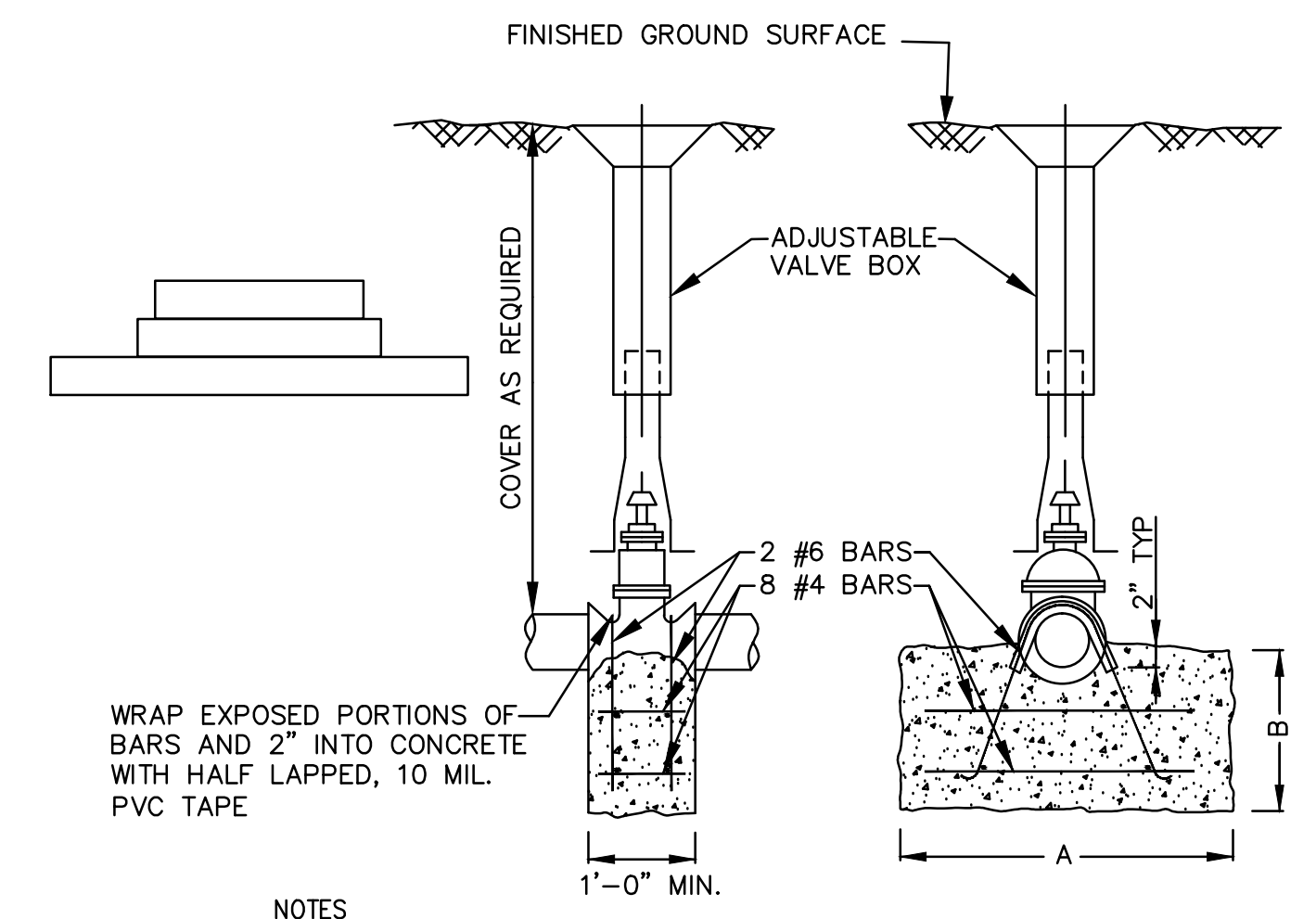


SEWER CHIMNEY CONNECTION  
N.T.S.



- NOTES:
- GRAVEL BORROW SHALL CONFORM TO MASSDOT SPECIFICATION M1.03.0.
  - CRUSHED STONE BEDDING SHALL CONFORM TO MASSDOT SPECIFICATION M2.01.1.
  - SUBGRADE SHALL CONSIST OF NATIVE SOIL OR IMPORTED SOIL CONFORMING TO THE MASSDOT SPECIFICATION FOR ORDINARY BORROW AND SHALL BE FREE OF ANY UNSUITABLE SOILS OR MATERIAL.
  - UNUSABLE SOIL OR MATERIAL SHALL INCLUDE BUT NOT BE LIMITED TO PEAT, MUCK, BROKEN PAVEMENT, STUMPS, LOGS, CONSTRUCTION DEBRIS OR ANY OTHER DELETERIOUS MATERIAL.

GRAVITY SEWER TRENCH DETAIL  
SCALE: N.T.S.



- NOTES:
- FLANGES, BOLTS, & NUTS SHALL BE KEPT CLEAR OF CONCRETE
  - VALVES SHALL OPEN TO THE RIGHT.

SIZE OF GATE VALVE	ANCHOR BLOCK DIMENSIONS (FT.)		
	A	B	
		200 PSI TEST	250 PSI TEST
3"	1.5	1.5	2.0
4"	2.0	1.5	2.0
6"	3.0	1.5	2.0
8"	3.0	1.5	2.0
10"	3.0	2.0	2.5
12"	3.5	2.0	2.5

WATER GATE DETAIL  
NOT TO SCALE

REV	DATE	DESCRIPTION	BY	APP

**MG**  
MCKENZIE  
ENGINEERING GROUP  
Assnippi Office Park  
150 Longwater Drive, Suite 101  
Norwell, MA 02061  
P: 781.792.3900  
F: 781.792.0333  
www.mckeng.com

**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

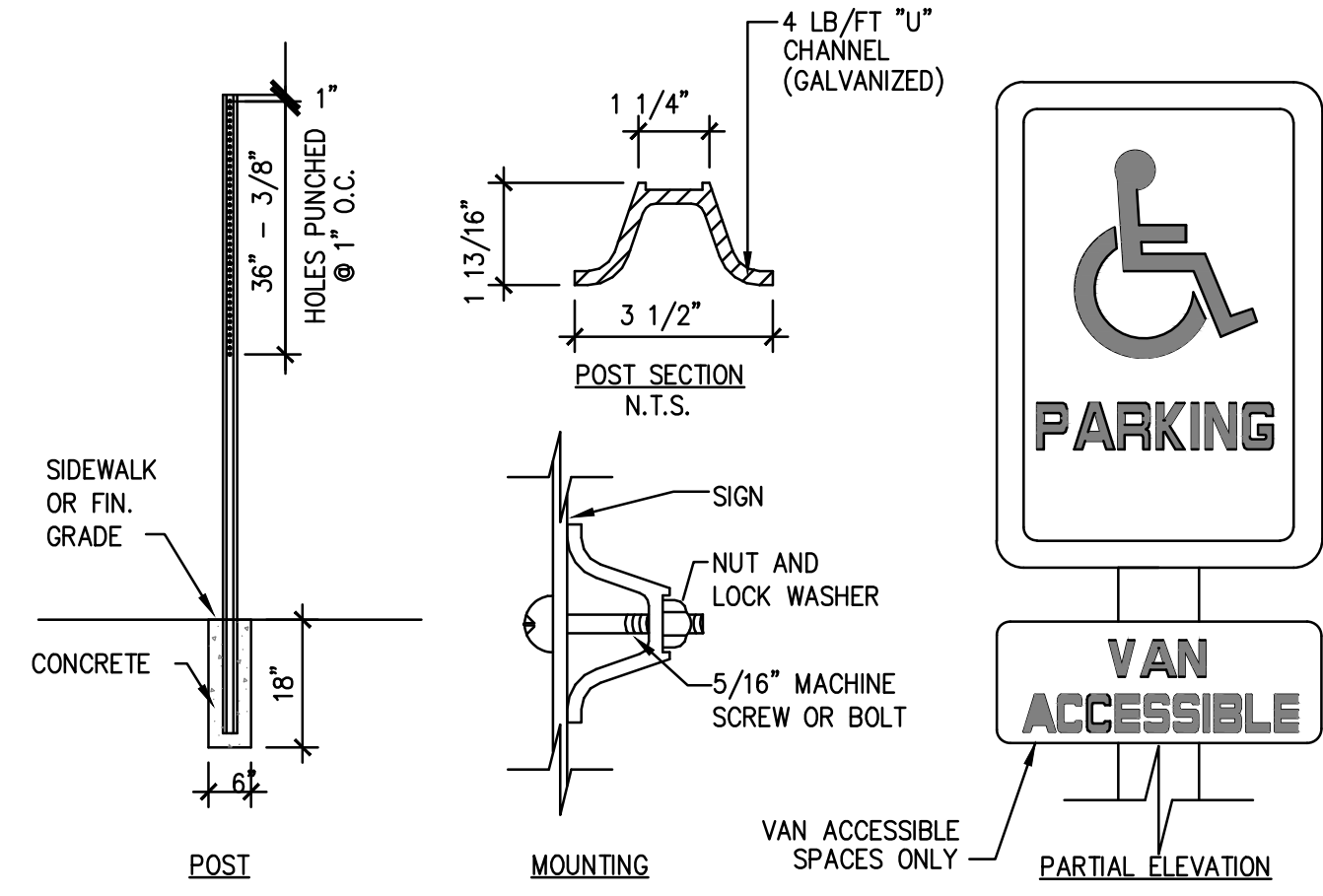
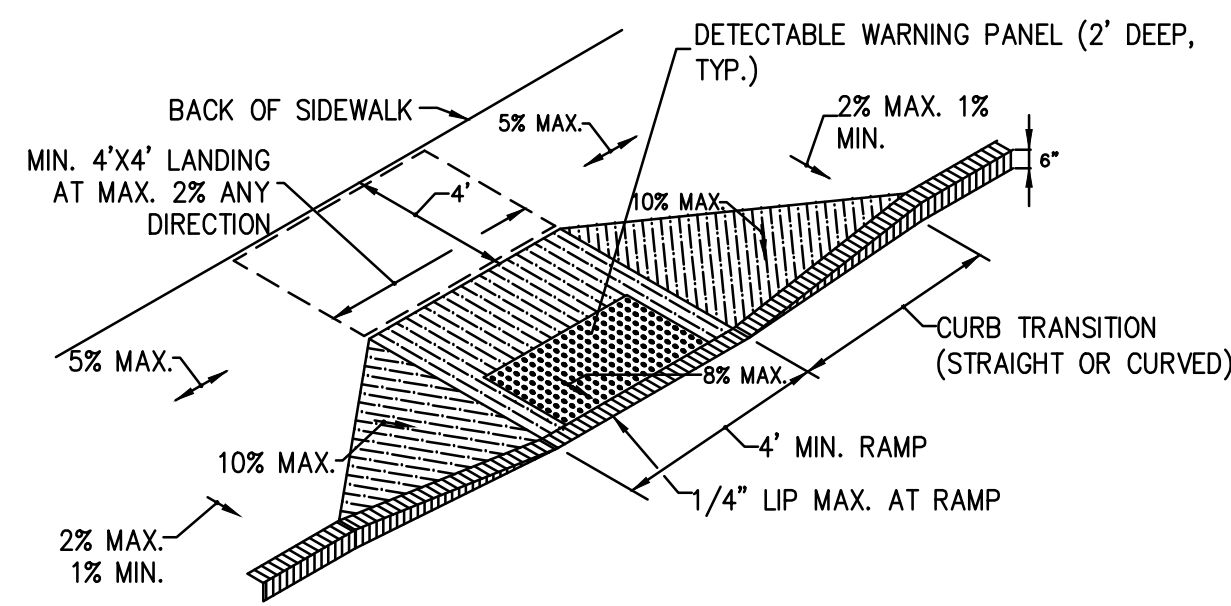
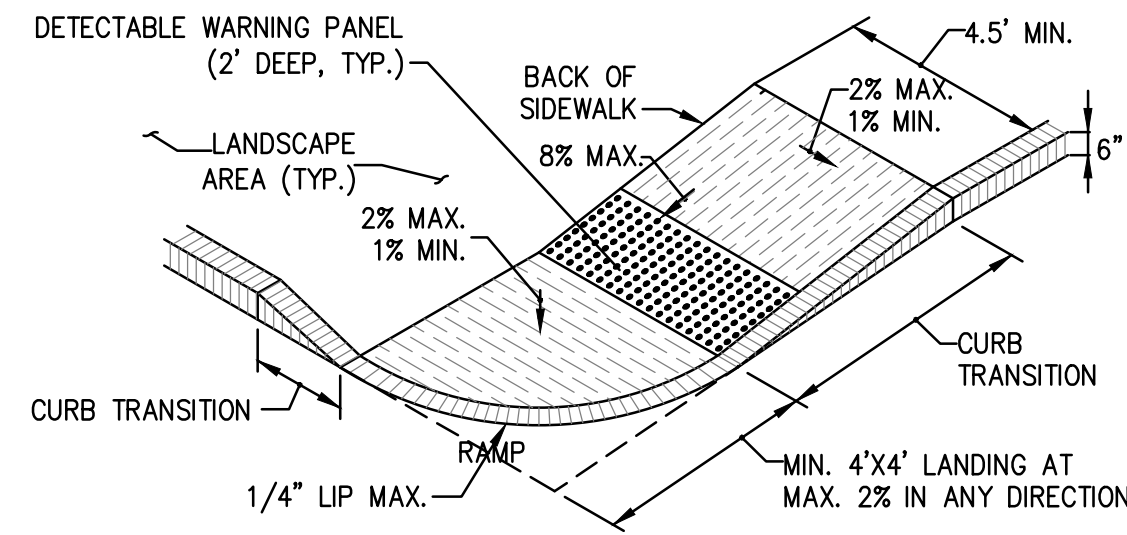
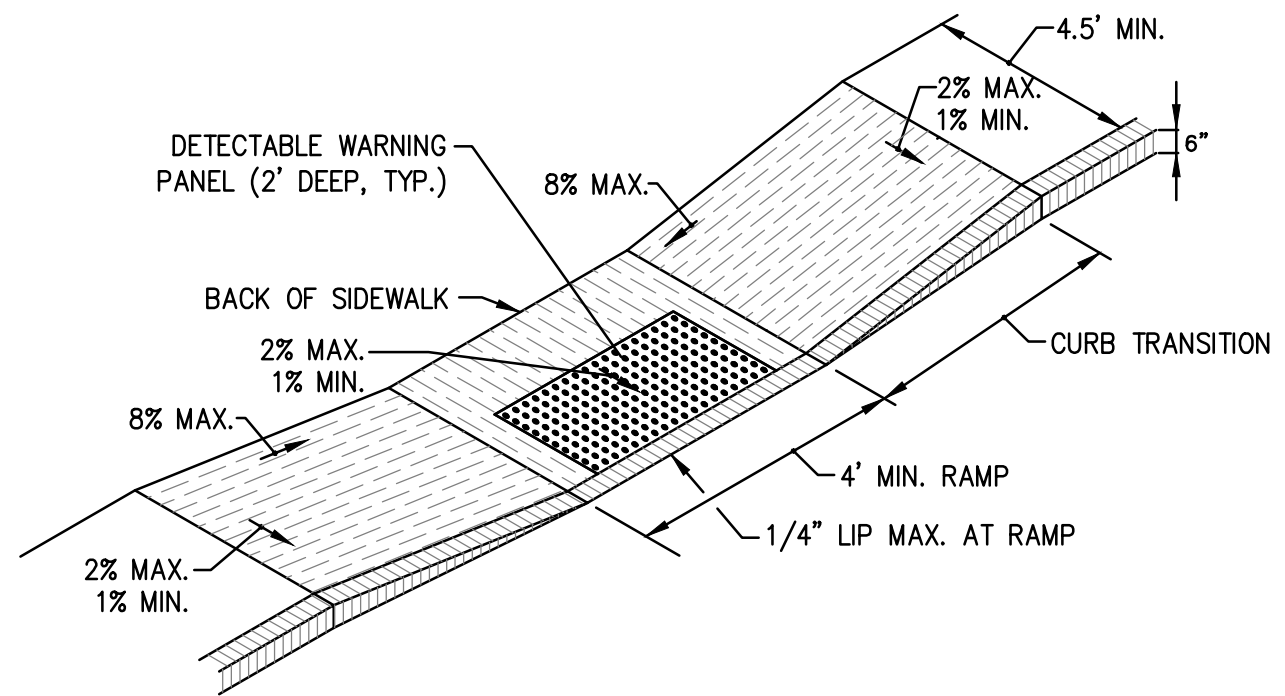
APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
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DWG. TITLE:

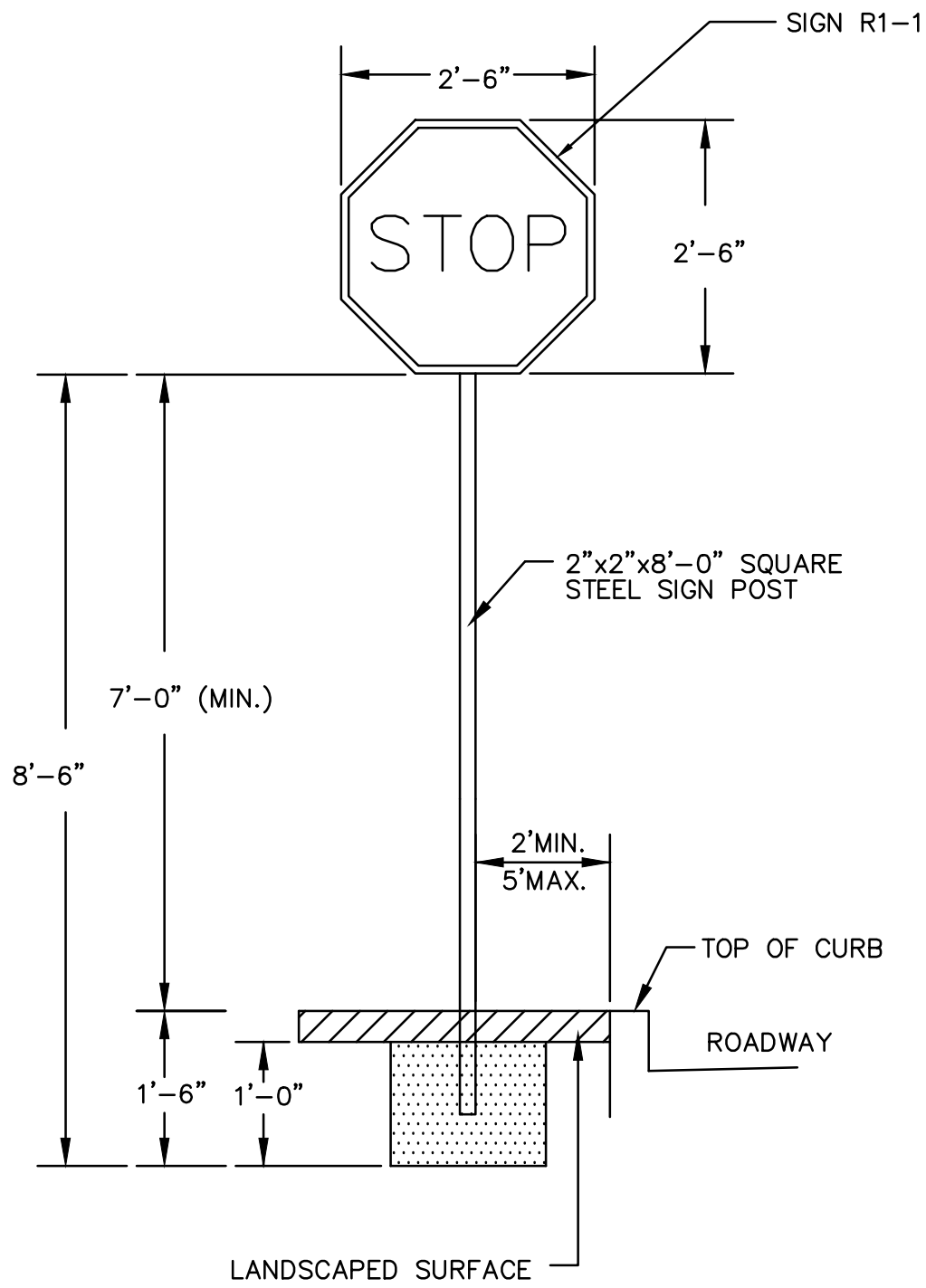
**CONSTRUCTION  
DETAILS**

DWG. NO.:  
**D-1**

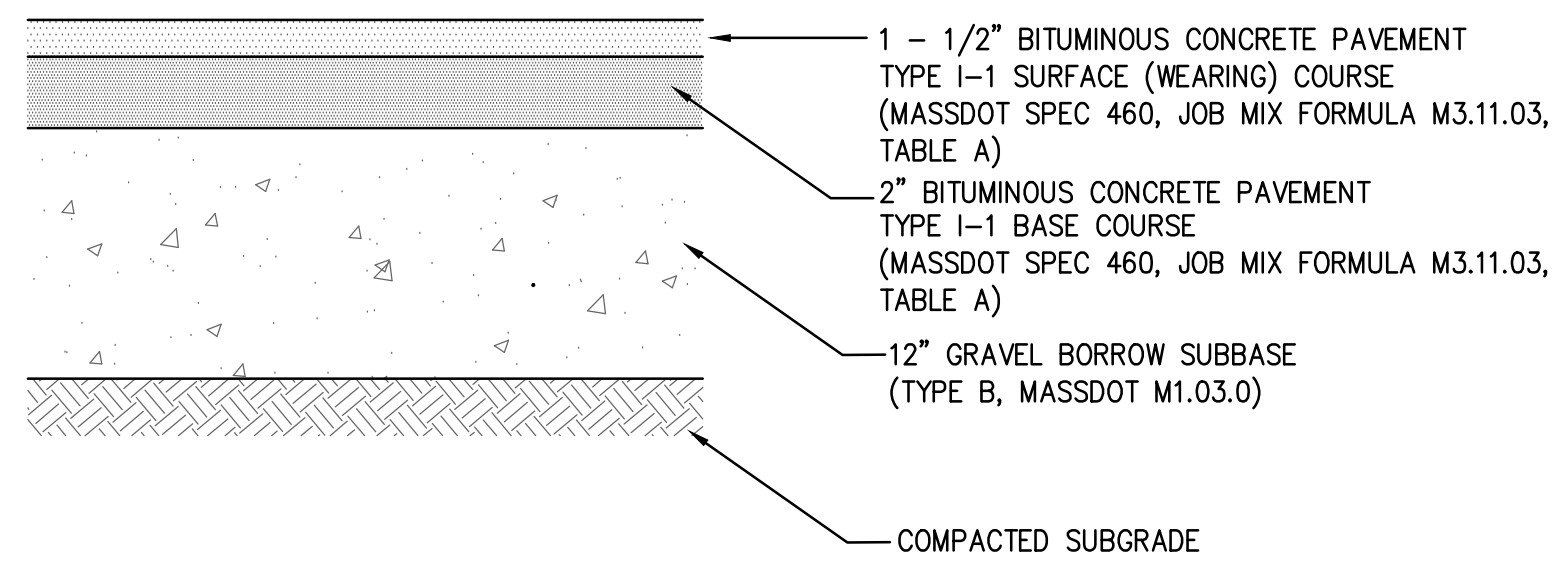
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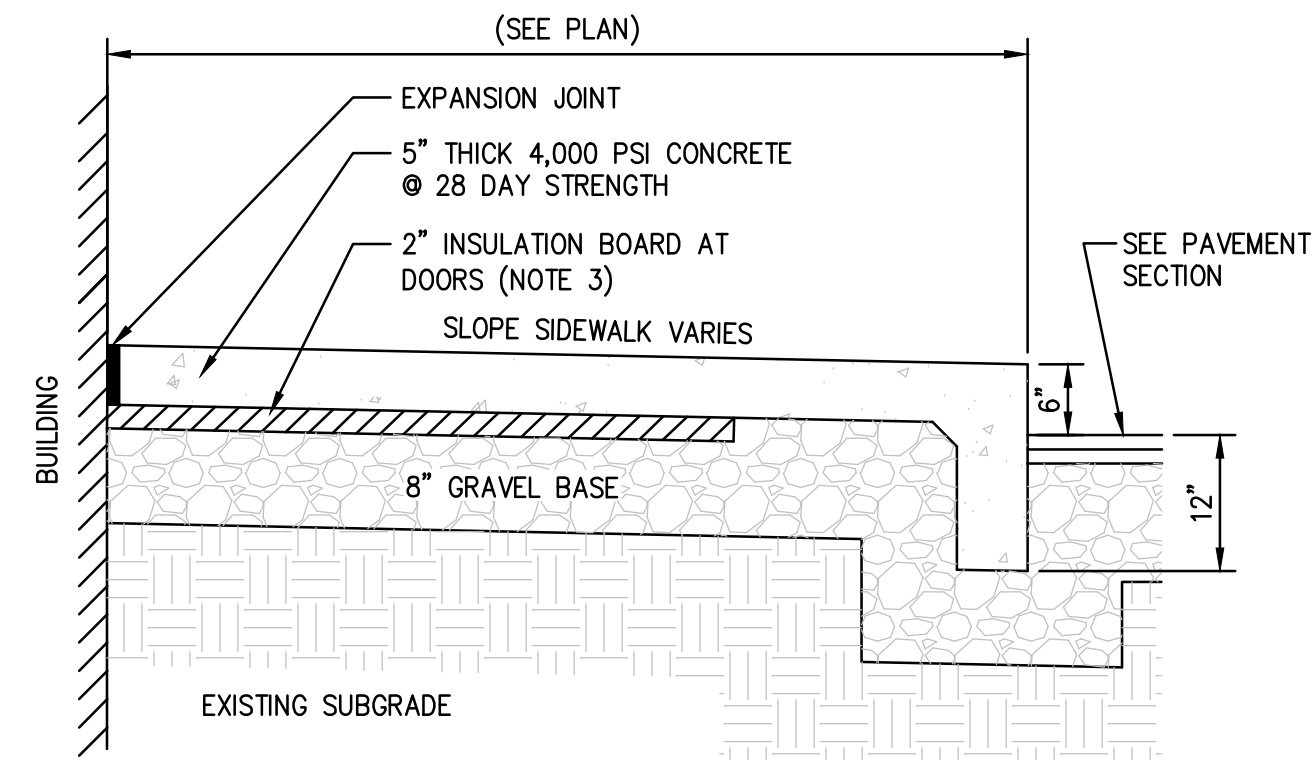
SIGN DETAIL  
SCALE: N.T.S.



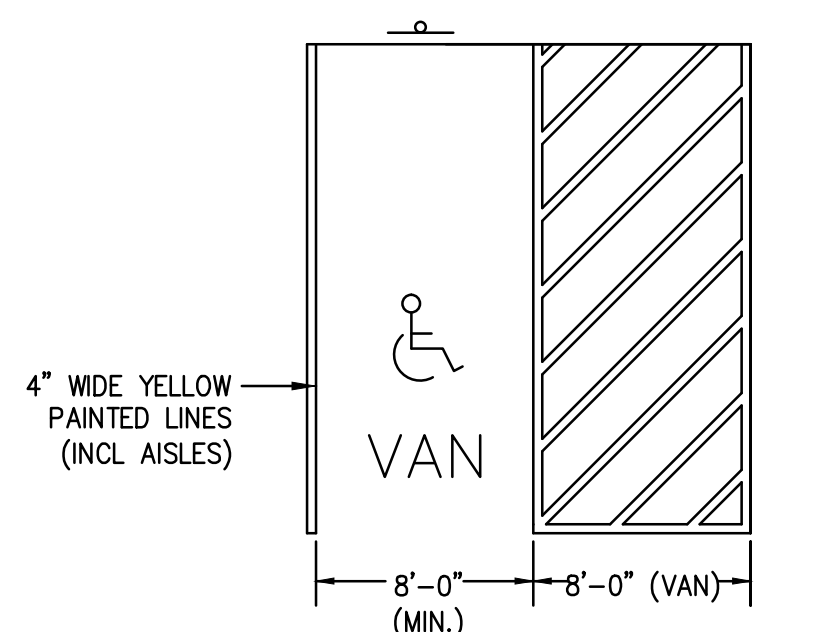
MODULAR BLOCK GRAVITY RETAINING WALL  
SCALE: N.T.S.



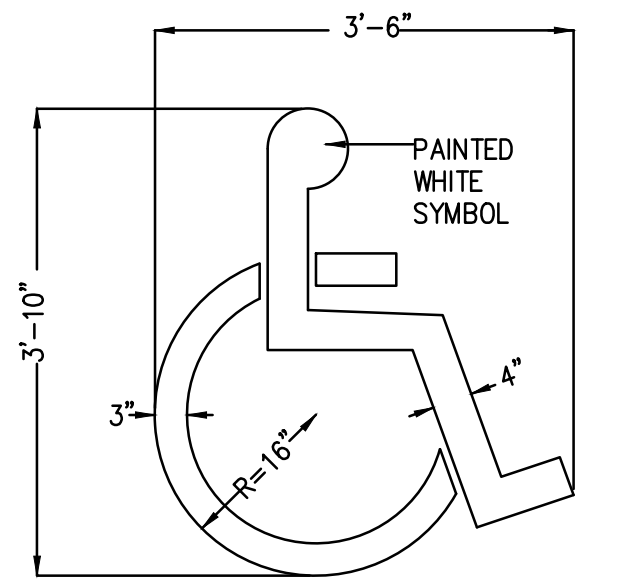
PARKING AREA PAVEMENT DETAIL  
SCALE: N.T.S.



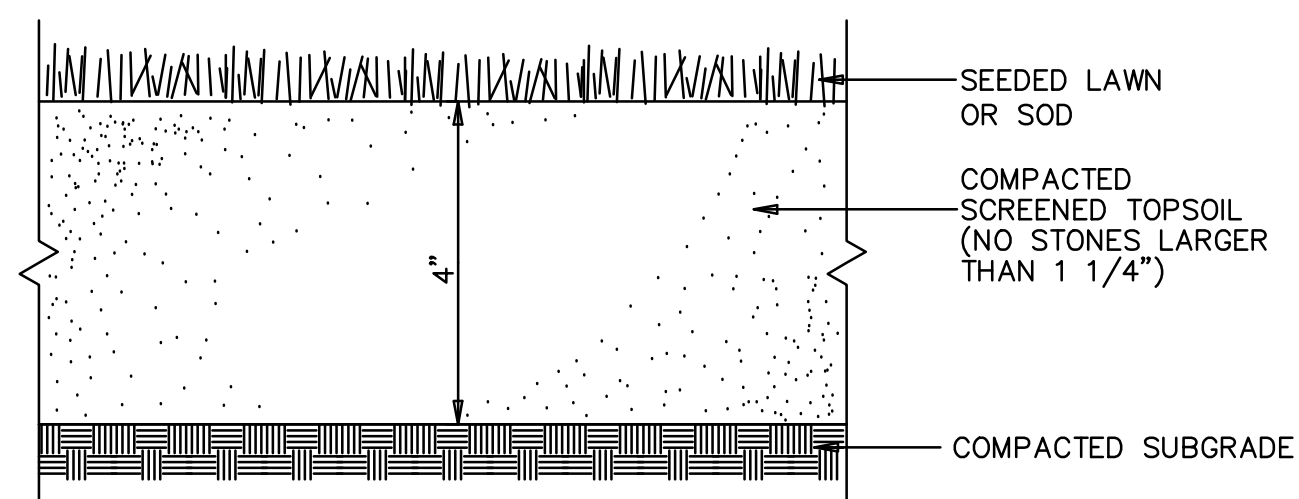
CONCRETE SIDEWALK AND MONOLITHIC CURB AT BUILDING  
SCALE: N.T.S.



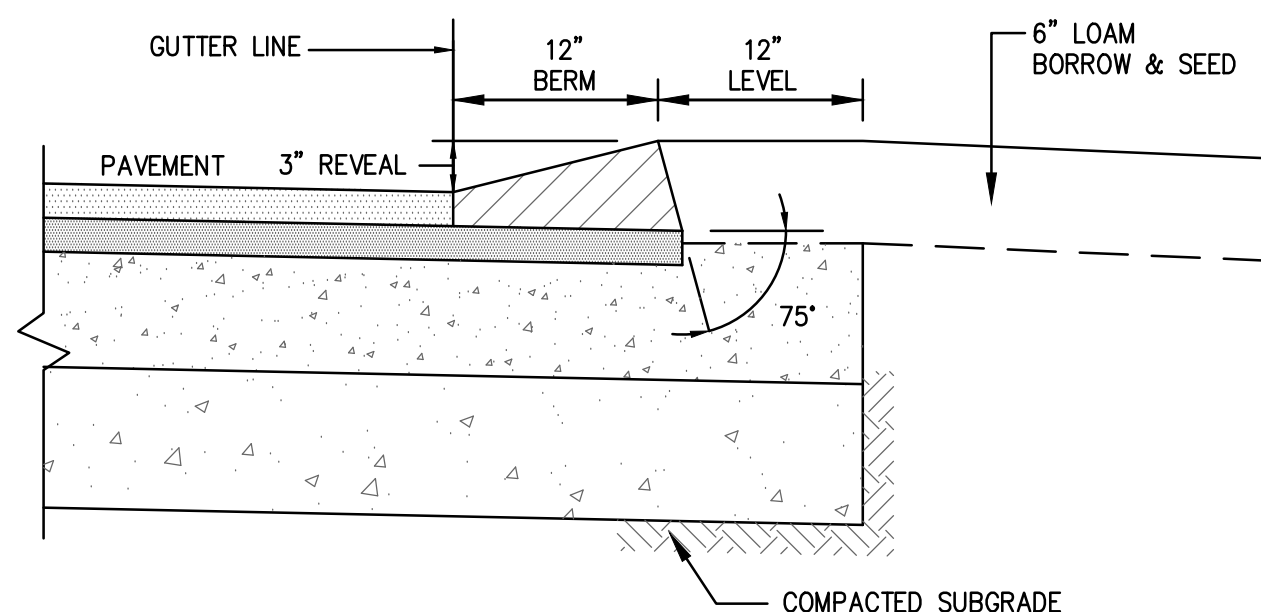
HANDICAP PARKING STALL DETAIL  
SCALE: N.T.S.



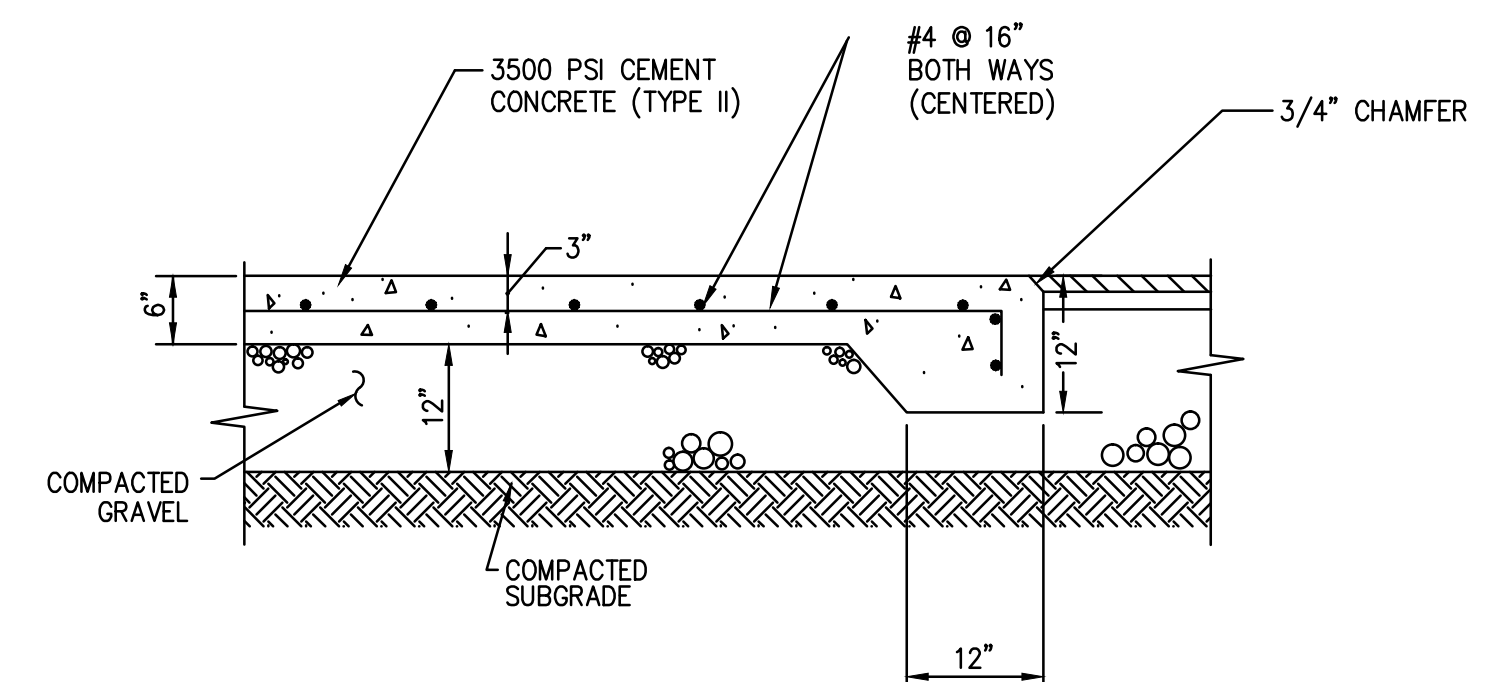
PAINTED HANDICAP SYMBOL DETAIL  
SCALE: N.T.S.



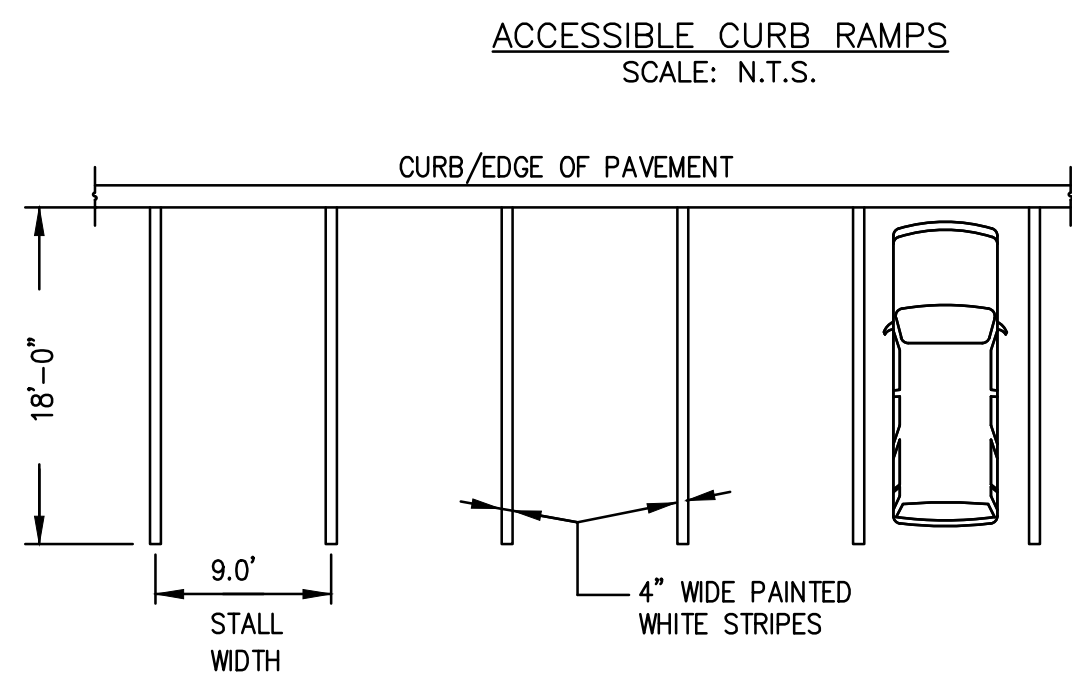
SEEDING OR SODDED LAWN DETAIL  
SCALE: N.T.S.



MONOLITHIC BITUMINOUS CONCRETE BERM (CAPE COD BERM) DETAIL  
SCALE: N.T.S.



CEMENT CONCRETE PAD DETAIL  
SCALE: N.T.S.



STANDARD SPACE  
TYPICAL STRIPING DETAILS  
SCALE: N.T.S.

- NOTES:
- SEE PLANS FOR CURB TYPE.
  - CURBS AND WALKS ALONG ACCESSIBLE ROUTES SHALL MEET OR EXCEED THE APPLICABLE REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD, FAIR HOUSING ACT AND ADA.
  - THE MAXIMUM ALLOWABLE SIDEWALK AND CURB RAMP CROSS SLOPES SHALL BE 2%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE EXCLUDING CURB RAMP SHALL BE 5%.
  - THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE CURB RAMP SHALL BE 8%.
  - MAINTAIN A MINIMUM OF 3 FEET CLEAR AT ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE (I.E., HYDRANTS, UTILITY POLES, TREE WELLS, SIGNS ETC.).
  - GRADE BASE OF RAMP TO PREVENT PONDING.
  - RAMP CONSTRUCTION SHALL CONFORM TO TYPICAL SIDEWALK SECTION.
  - WHERE ACCESSIBLE ROUTES ARE LESS THAN 5' IN WIDTH (EXCLUDING CURBING) A 5'X5' PASSING AREA SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200 FEET.
  - ALL CURBING AT RAMP SHALL BE VERTICAL CURBING SET FLUSH WHERE IT ABUTS ROADWAY.
  - ALL RAMP SHALL BE CEMENT CONCRETE OR BITUMINOUS CONCRETE WITH ROUGHENED NON-SLIP SURFACE.
  - ALL DETECTABLE WARNING PANELS SHALL BE PER TOWN OF NEWBURYPORT STANDARD DETAILS.
  - THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE-CONTACT.

BY	APP	DESCRIPTION	DATE	REV

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**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 10, 2020  
SCALE:  
PROJECT NO.: 219-180  
DWG. TITLE:

**CONSTRUCTION  
DETAILS**

DWG. NO.:  
**D-2**



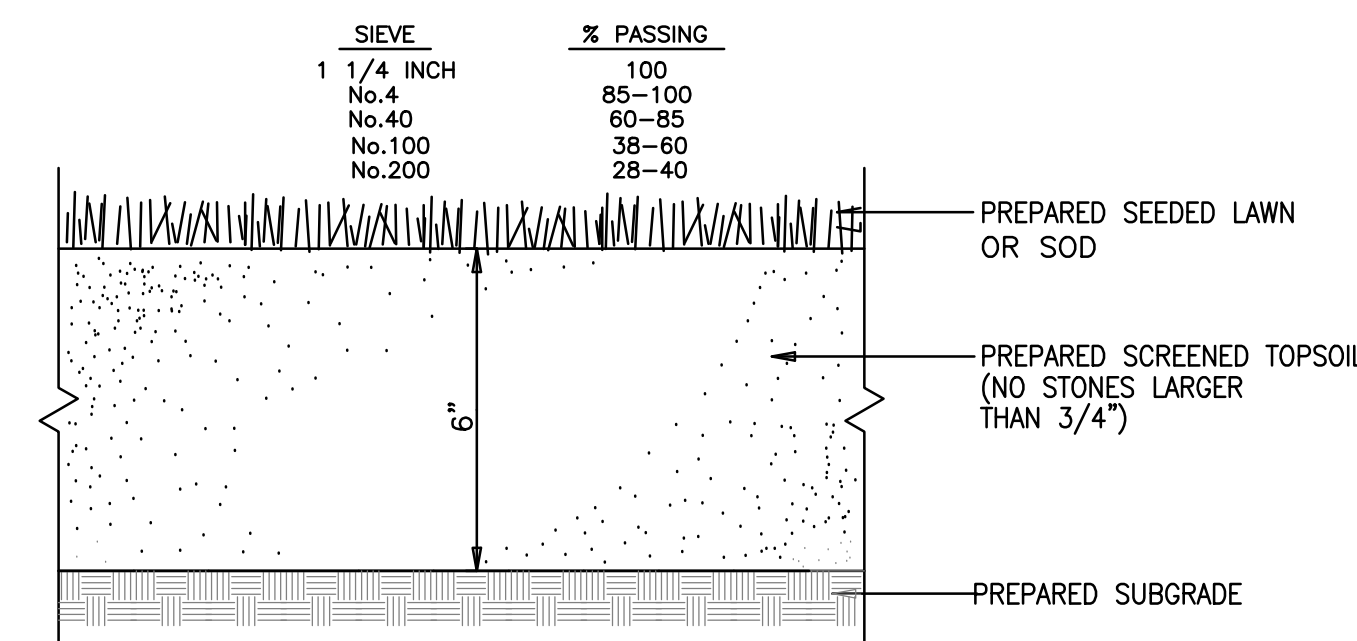
**SEEDING SPECIFICATIONS**

**SEEDING RECOMMENDATIONS**

1. **SEEDBED PREPARATION**
  - A. SURFACE AND SEEPAGE WATER SHOULD BE DRAINED OR DIVERTED FROM THE SITE TO PREVENT DROWNING OR WINTER KILLING OF THE PLANTS.
  - B. STONES LARGER THAN FOUR INCHES AND TRASH SHOULD BE REMOVED BECAUSE THEY INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF ABOUT FOUR INCHES TO PREPARE A SEEDBED AND MIX FERTILIZER AND LIME INTO THE SOIL. THE SEEDBED SHOULD BE LEFT IN A REASONABLY FIRM AND SMOOTH CONDITION. THE LAST TILLAGE OPERATION SHOULD BE PERFORMED ACROSS THE SLOPE WHEREVER PRACTICAL.
2. **ESTABLISHING A STAND**
  - A. LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:  
 AGRICULTURAL LIMESTONE: 2 TONS PER ACRE OR 100 LBS. PER SQ. FT.  
 NITROGEN (N): 50 LBS. PER ACRE OR 1.1 LBS. PER 1000 SQ. FT.  
 PHOSPHATE (P O<sub>2</sub>): 100 LBS. PER ACRE OR 2.2 LBS. PER 1000 SQ. FT.  
 POTASH (K O<sub>2</sub>): 100 LBS. PER ACRE OR 2.2 LBS. PER 1000 SQ. FT.  
 (NOTE: THIS IS THE EQUIVALENT OF 500 LBS. PER ACRE OF 10-20-20 FERTILIZER OF 1,000 LBS. PER ACRE OF 5-10-10)
  - B. SEED SHOULD BE SPREAD UNIFORMLY BY THE METHOD MOST APPROPRIATE FOR THE SITE. METHODS INCLUDE BROADCASTING, DRILLING, AND HYDROSEEDING. WHERE BROADCASTING IS USED, COVER SEED WITH 0.25 INCH OF SOIL OR LESS, BY CULTIPACKING OR RAKING.
  - C. REFER TO SEEDING RATES AND SEEDING GUIDES FOR APPROPRIATE SEED MIXTURES AND RATES OF SEEDING.
  - D. WHEN SEEDED AREAS ARE MULCHED, PLANTINGS MAY BE MADE FROM EARLY SPRING SPRING TO EARLY OCTOBER. WHEN SEEDED AREAS ARE NOT MULCHED, PLANTINGS SHOULD BE MADE FROM EARLY SPRING TO MAY 20 OR FROM AUGUST 10 TO SEPTEMBER 1.
3. **MULCH**
  - A. HAY, STRAW, OR OTHER MULCH, WHEN NEEDED, SHOULD BE APPLIED IMMEDIATELY AFTER SEEDING.
  - B. MULCH WILL BE HELD IN PLACE USING TECHNIQUES AS SPECIFIED IN THE "BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN"
4. **MAINTENANCE TO ESTABLISH A STAND**
  - A. PLANTED AREAS SHOULD BE PROTECTED FROM DAMAGE BY FIRE, GRAZING, TRAFFIC, AND DENSE WEED GROWTH.
  - B. FERTILIZATION NEEDS SHOULD BE DETERMINED BY ONSITE INSPECTIONS. SUPPLEMENTAL FERTILIZER IS USUALLY THE KEY TO FULLY COMPLETE THE ESTABLISHMENT OF THE STAND BECAUSE MOST PERENNIALS TAKE 2 TO 3 YEARS TO BECOME ESTABLISHED.
  - C. IN WATERWAYS, CHANNELS, OR SWALES WHERE UNIFORM FLOW CONDITIONS ARE ANTICIPATED OCCASIONAL MOWING MAY BE NECESSARY TO CONTROL GROWTH OF WOODY VEGETATION.

**NOTES:**

1. TOP OF LOAM (TOPSOIL) IS FINISHED GRADE.
2. TOPSOIL SHALL CONTAIN BETWEEN 5% AND 12% ORGANIC MATTER AND SHALL HAVE A MAXIMUM STONE SIZE OF 3/4" AND SHALL CONFORM TO THE FOLLOWING GRADATION:



**SEEDDED OR SODDED LAWN DETAIL**  
SCALE: N.T.S.

**SEEDING RATES**

	POUND / ACRE	POUNDS / 1,000 S.F.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
REDTOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
BIRDSFOOT TREFOIL	15	0.35
TOTAL	40	0.95
C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. BIRDSFOOT TREFOIL	10	0.25
REDTOP	5	0.10
REED CANARY GRASS	15	0.35
TOTAL	30	0.70
E. TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL	50	1.20
F. CREEPING RED FESCUE 1/	85	2.00
KENTUCKY BLUEGRASS 1/	85	2.00
TOTAL	170	4.00
G. TALL FESCUE 1/	150	3.60

**TEMPORARY SEEDING RATES**

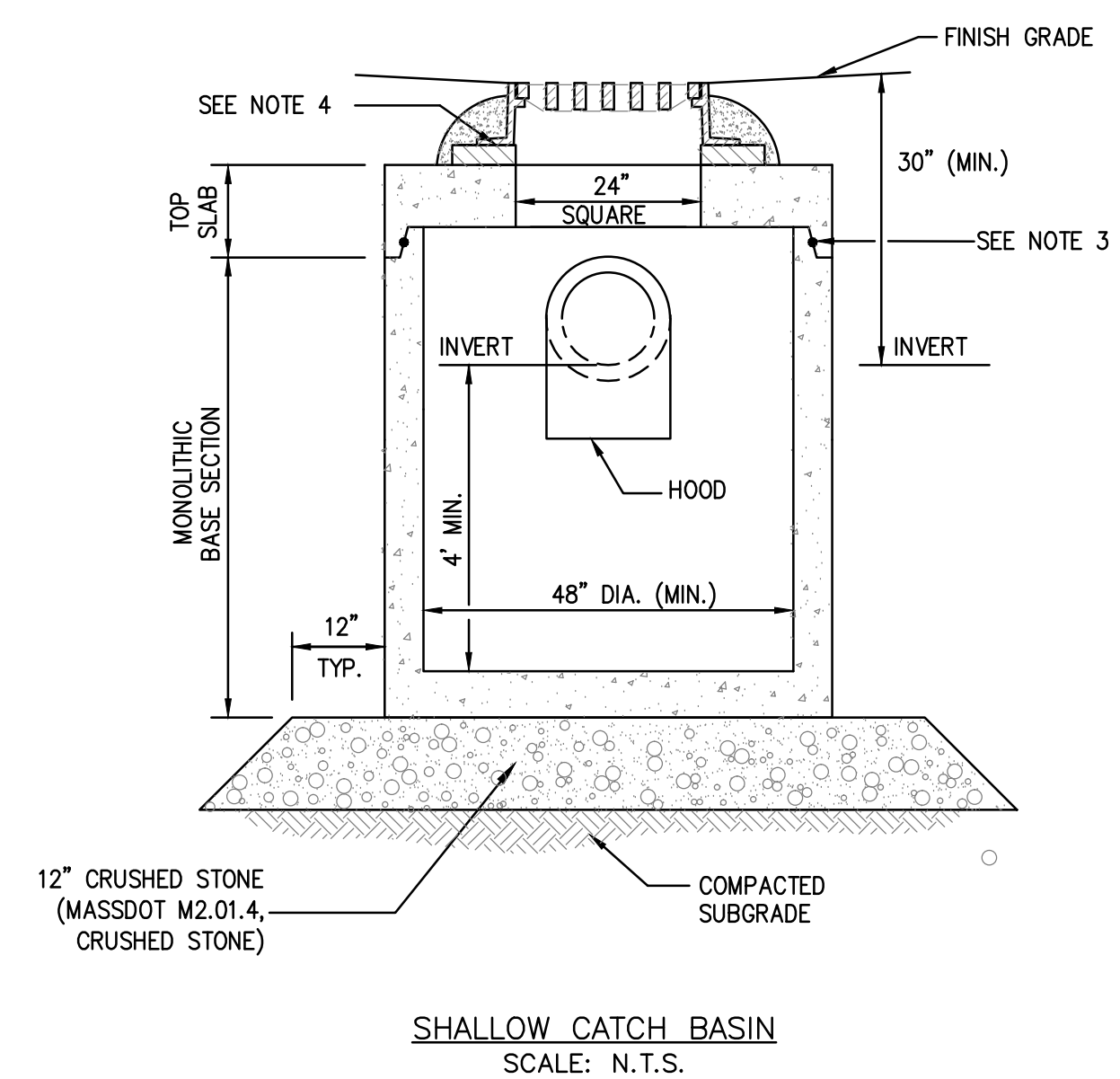
H. WINTER RYE	112	2.50	(BEST FOR FALL SEEDING, AUG 15 TO SEPT. 5)
OATS	80	2.00	(BEST FOR SPRING SEEDING, BEFORE MAY 15)
ANNUAL RYEGRASS	40	1.00	(BEST FOR FALL SEEDING, AUG 15 TO SEPT. 15)

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

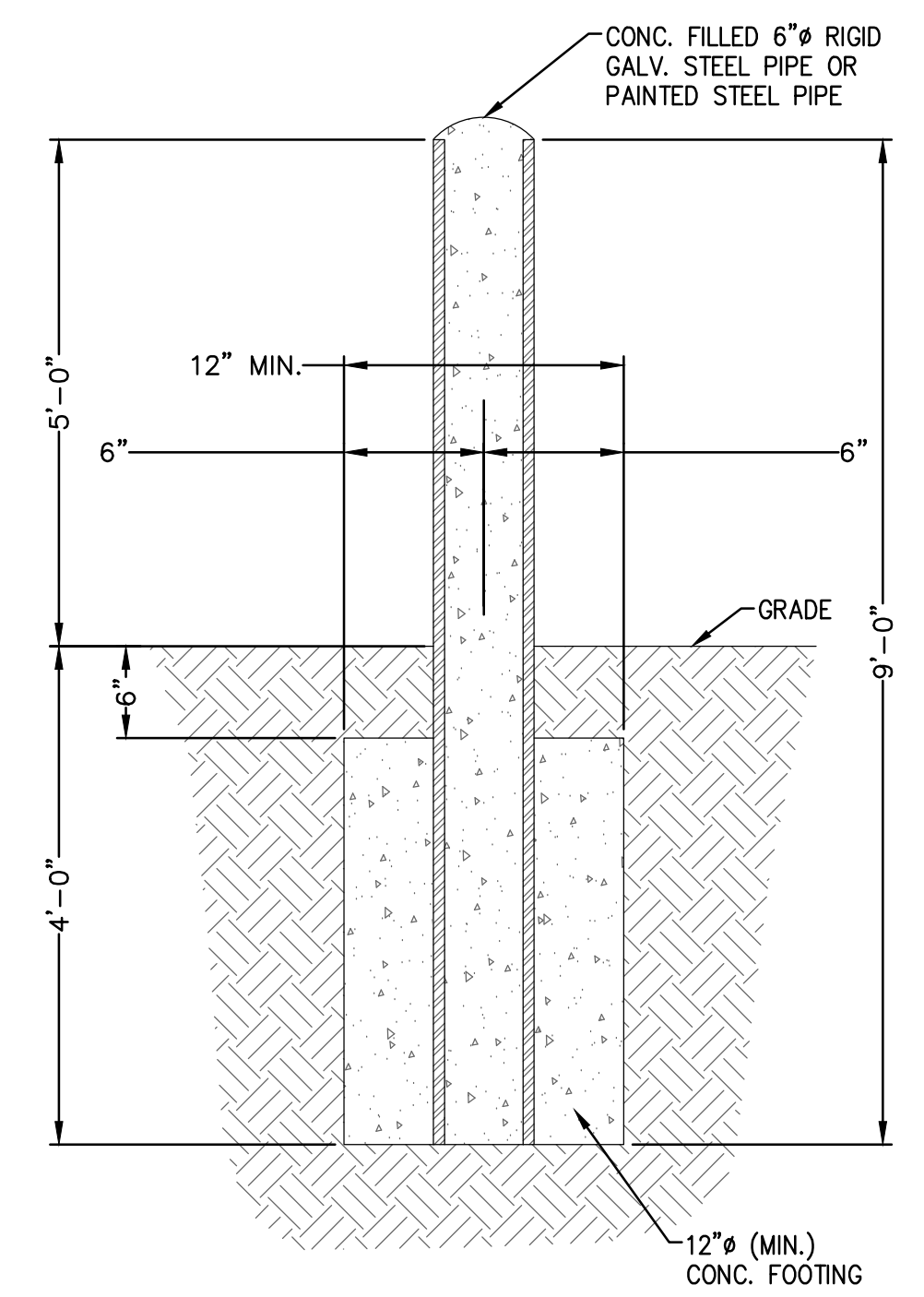
**SEEDING GUIDE**

USE	SEEDING MIXTURE 1/
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	E
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	D
LAWN AREAS	F

- NOTES:**
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
  2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
  3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
  4. CATCH BASIN FRAME AND GRATE (4" DEPTH) SHALL BE SET IN FULL MORTAR BED.
  5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.



**SHALLOW CATCH BASIN**  
SCALE: N.T.S.



**BOLLARD DETAIL**  
N.T.S.

REV	DATE	DESCRIPTION	BY	APP

**MCKENZIE ENGINEERING GROUP**  
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**SITE DEVELOPMENT PLAN  
 PROPOSED MEDICAL BUILDING  
 20 HENRY GRAF JR. ROAD  
 NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

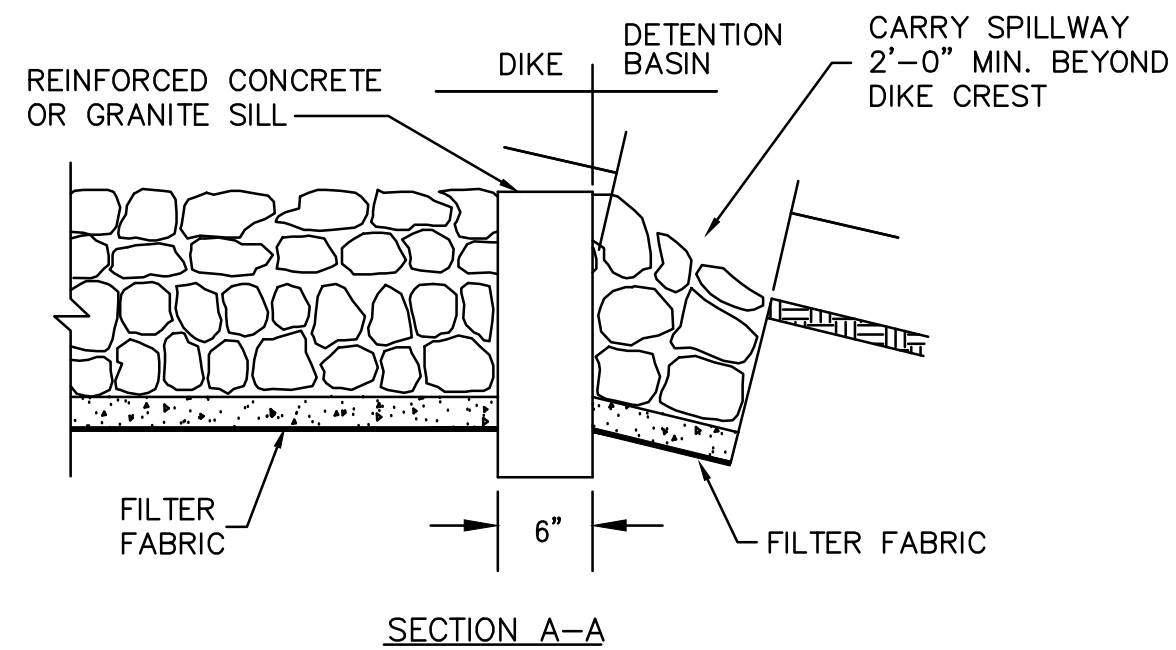
APPLICANT:  
**SPORTS MEDICINE NORTH  
 ORTHOPEDIC SURGERY, INC.  
 C/O CONSERV GROUP, INC.**  
 110 STATE ROAD  
 SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
 DESIGNED BY: ESS  
 CHECKED BY: BCM  
 APPROVED BY: BCM  
 DATE: MARCH 17, 2020  
 SCALE:  
 PROJECT NO.: 219-180  
 DWG. TITLE:

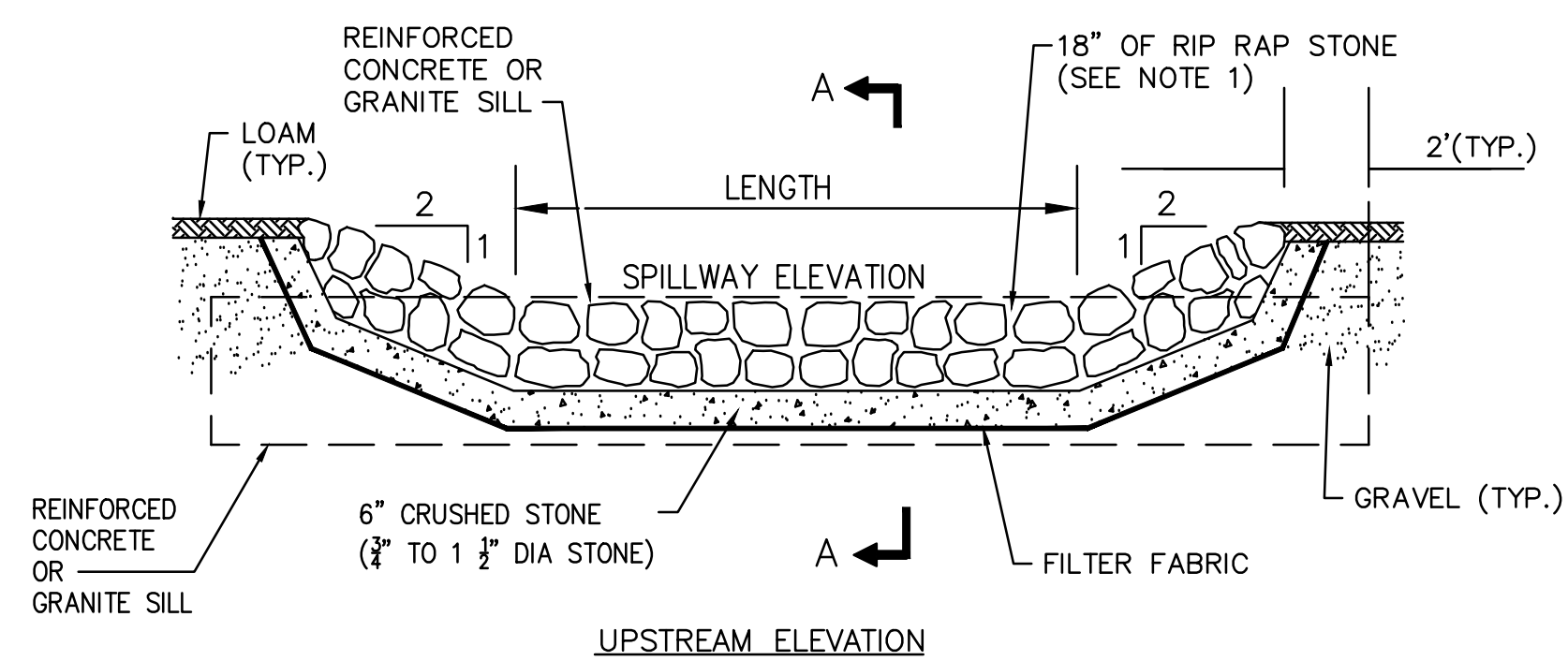
**CONSTRUCTION  
 DETAILS**

DWG. NO.: **D-3**

NOT FOR CONSTRUCTION



SECTION A-A

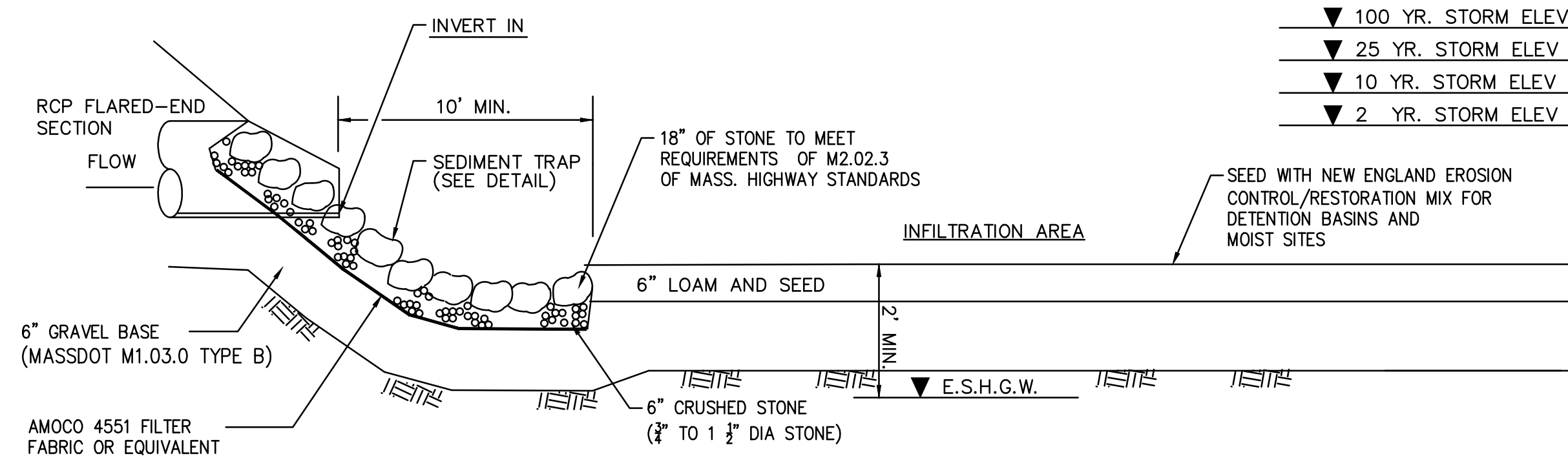


UPSTREAM ELEVATION

SPILLWAY SCHEDULE			
BASIN	SPILLWAY ELEV.	LENGTH	100-YR FLOOD ELEV.
#1	14.35	6 FT	13.91
#2	14.50	2 FT	14.98

NOTE:  
1. RIP RAP TO BE HAND CHINKED WITH A SMOOTH SURFACE ALONG THE TOP OF THE DIKE AND A ROUGH SURFACE ALONG THE DOWNSTREAM FACE AND TOE OF THE DIKE. STONE TO MEET M2.02.3 REQUIREMENTS.

SPILLWAY DETAIL  
SCALE: N.T.S.



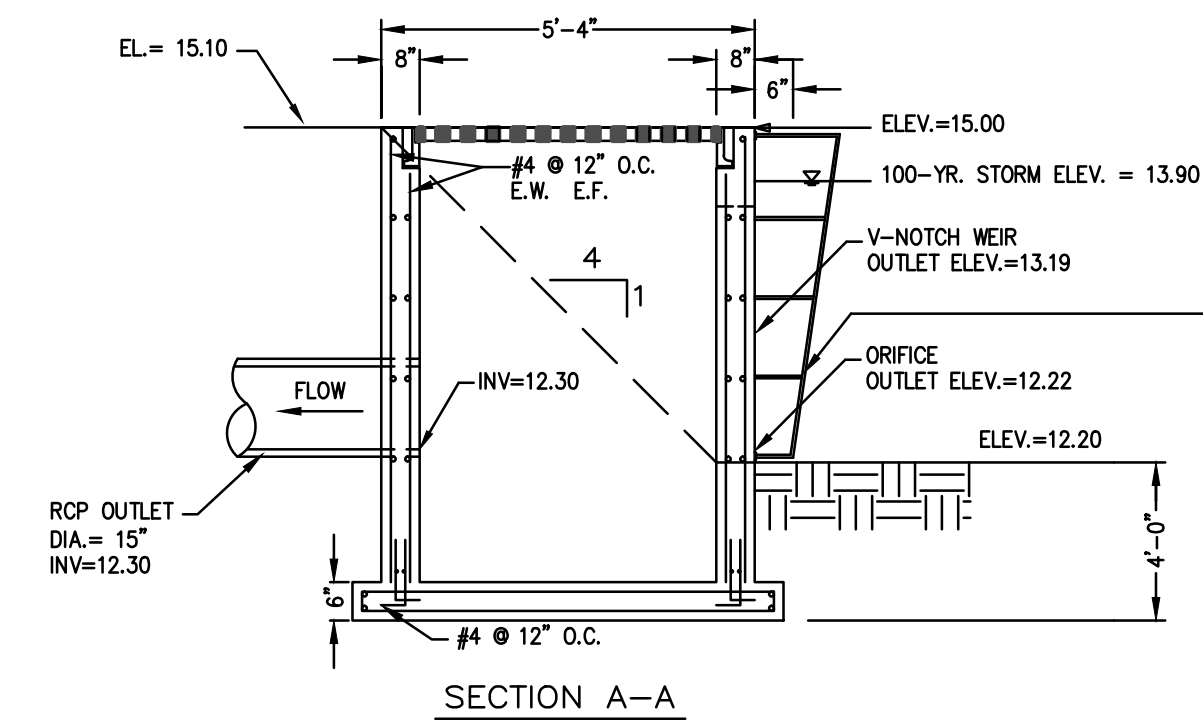
INFILTRATION BASIN SCHEDULE

APPROX. EXISTING GRADE	BASIN #1		BASIN #2		APPROX. EXISTING GRADE
	INVERT IN	100-YR STORM	25-YR STORM	10-YR STORM	
13.80	13.50/13.27	14.10	13.91	14.98	14.10
13.91	13.66	14.83	13.51	14.76	14.83
13.51	13.18	14.63	13.18	14.63	14.63
13.18	15.00	16.00	15.00	16.00	16.00

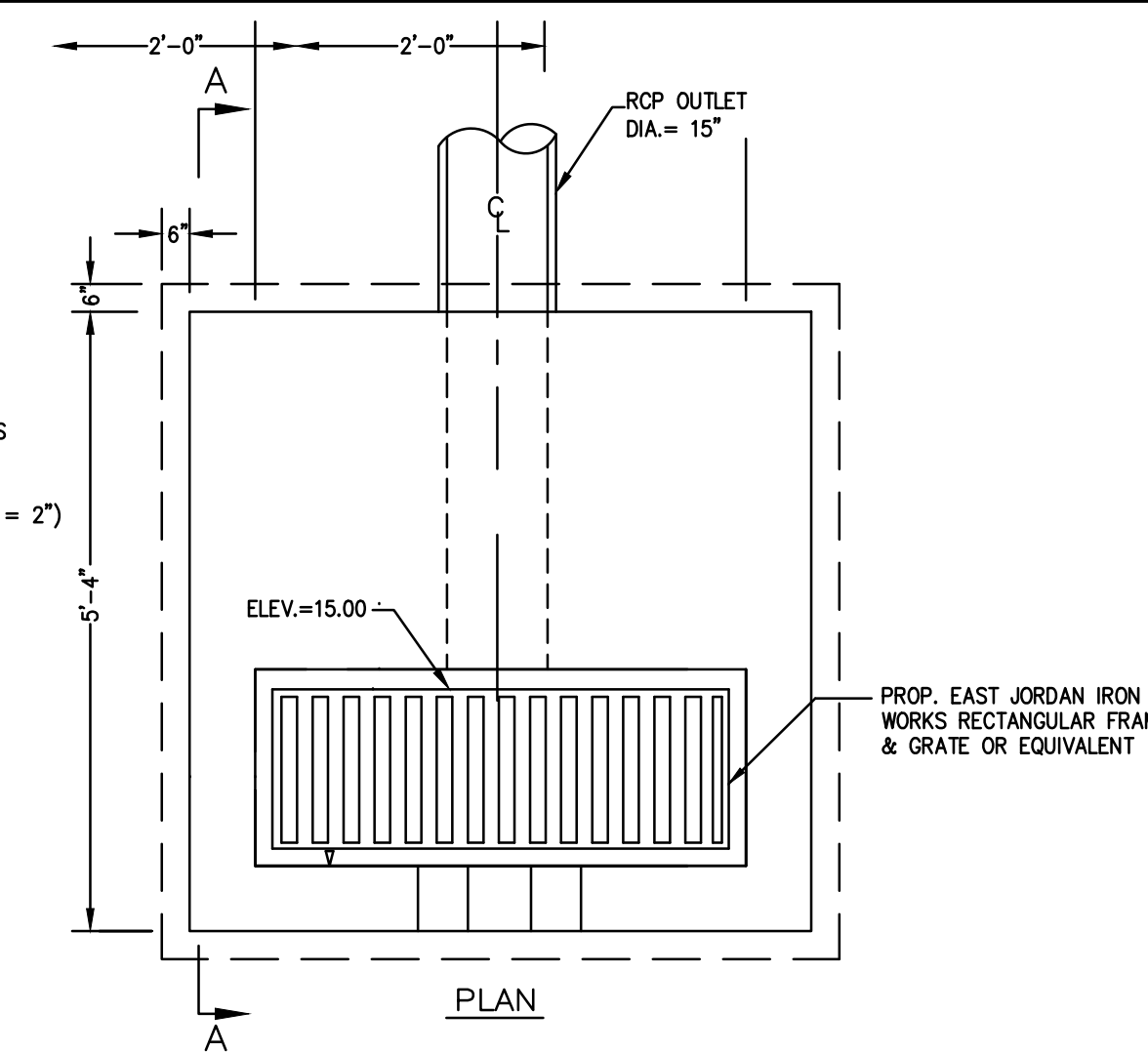
NOTES:

- FILL AND BASE FOR DIKES SHALL INSURE WATER TIGHTNESS AND STABILITY.
- BASIN SIDE SLOPES AND BOTTOM SHALL BE PROVIDED WITH 6" OF LOAMY SAND, SEEDED AT A RATE OF 2 POUNDS OF RED TOP, 15 POUNDS OF CREEPING RED FESCUE AND 20 POUNDS TALL FESCUE PER ACRE.
- THE CONTRACTOR SHALL NOT DISCHARGE SEDIMENT-LADEN WATER TO DETENTION BASIN COMPONENTS DURING CONSTRUCTION, INCLUDING DEWATERING OR TEMPORARY SURFACE RUNOFF.
- ALL CONTRIBUTING AREAS TO THE BASIN SHALL BE FULLY STABILIZED PRIOR TO THE BASIN BEING PLACED INTO SERVICE.
- THE CONTRACTOR SHALL PROVIDE PROTECTION ABOVE AND AROUND THE DETENTION AREA OF THE BASIN FROM CONSTRUCTION VEHICLE ACTIVITY. NO HEAVY EQUIPMENT SHALL BE ALLOWED ON THE BASIN FLOORS AFTER INSTALLATION. CONTRACTOR SHALL MINIMIZE CONSTRUCTION EQUIPMENT TRAFFIC WITHIN THE BASIN AT ALL TIMES DURING AND AFTER CONSTRUCTION.

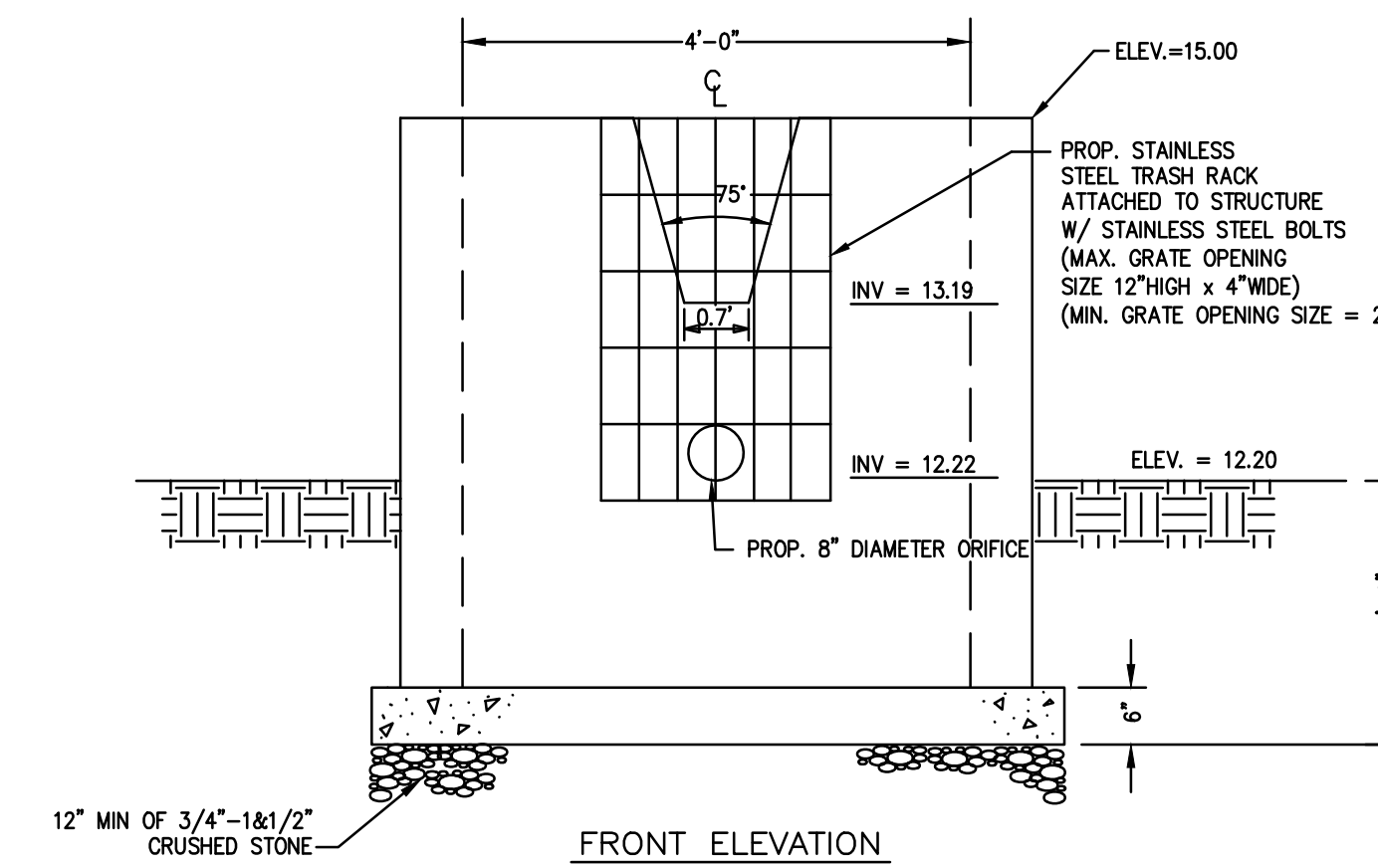
DETENTION BASIN SECTION (BASIN #1, #2)  
SCALE: N.T.S.



SECTION A-A

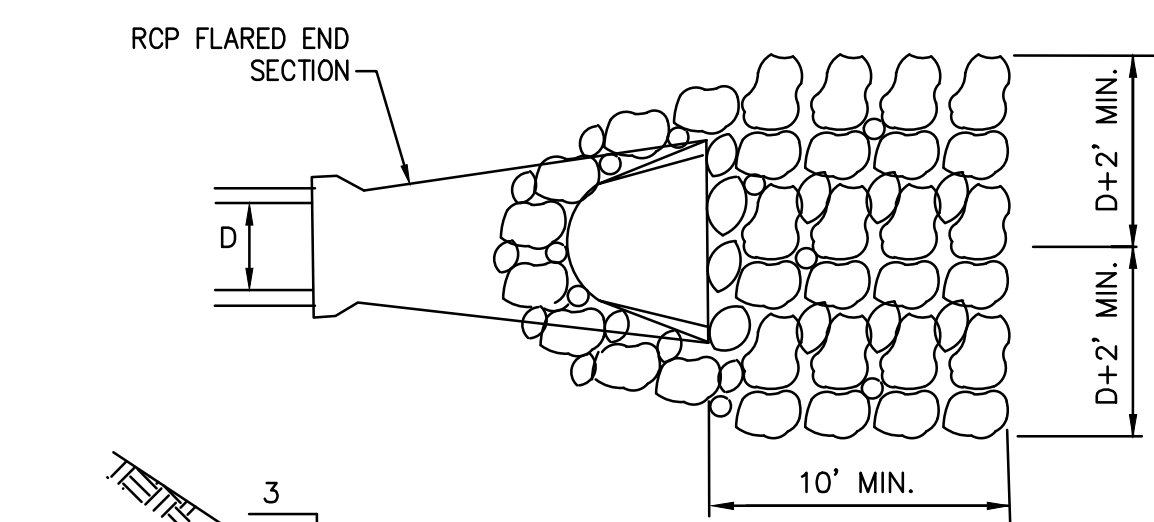


PLAN

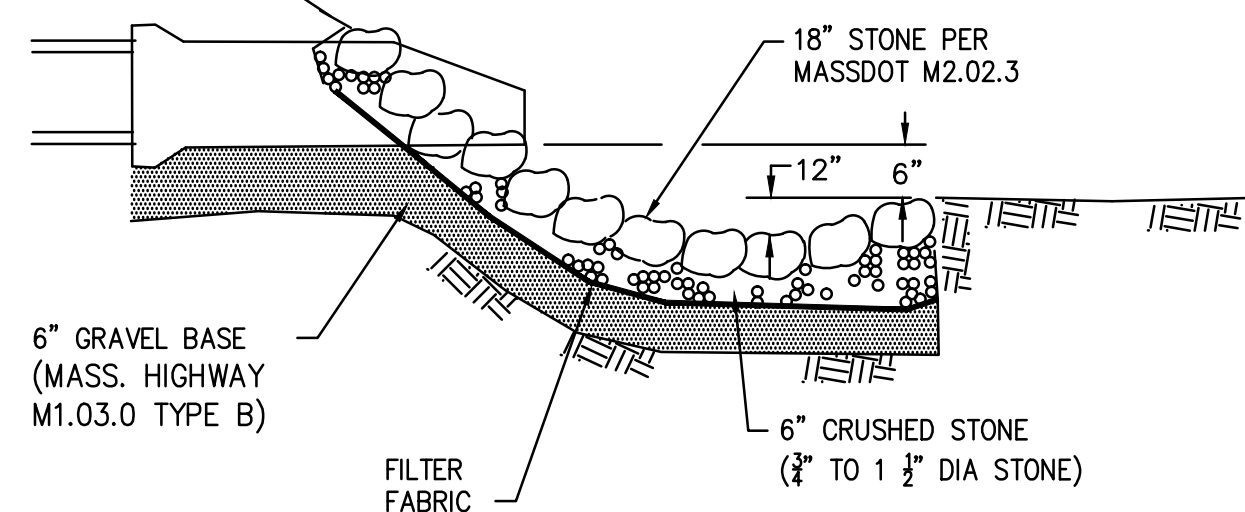


FRONT ELEVATION

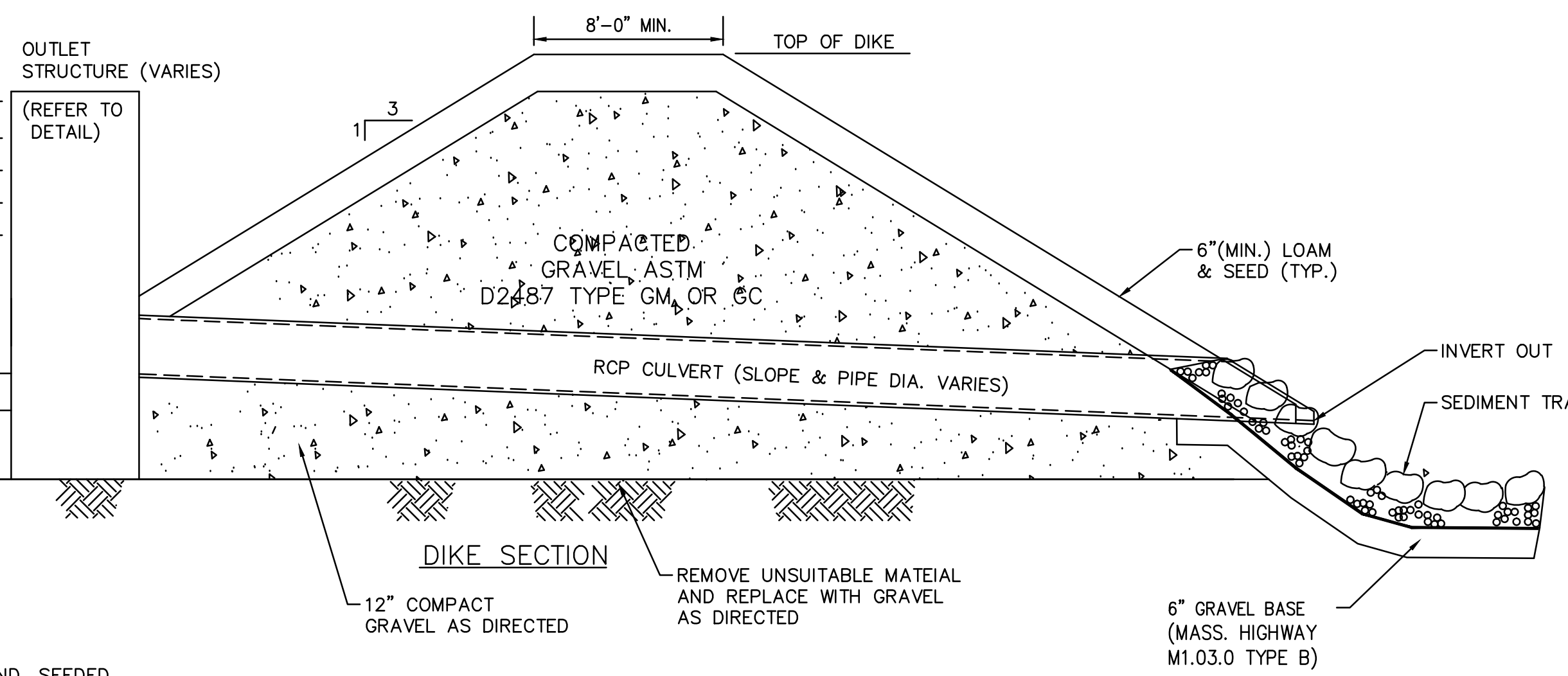
DETENTION BASIN OUTLET CONTROL STRUCTURE  
SCALE: N.T.S.



TYPICAL SEDIMENT TRAP DETAIL  
SCALE: N.T.S.



OUTLET STRUCTURE (VARIES)  
(REFER TO DETAIL)



DIKE SECTION

REV	DATE	DESCRIPTION	BY	APP

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**SITE DEVELOPMENT PLAN  
PROPOSED MEDICAL BUILDING  
20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

PROFESSIONAL ENGINEER:

APPLICANT:  
**SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.**  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS  
DESIGNED BY: ESS  
CHECKED BY: BCM  
APPROVED BY: BCM  
DATE: MARCH 17, 2020  
SCALE:  
PROJECT NO.: 219-180  
DWG. TITLE:

**CONSTRUCTION  
DETAILS**

DWG. NO.:  
**D-4**

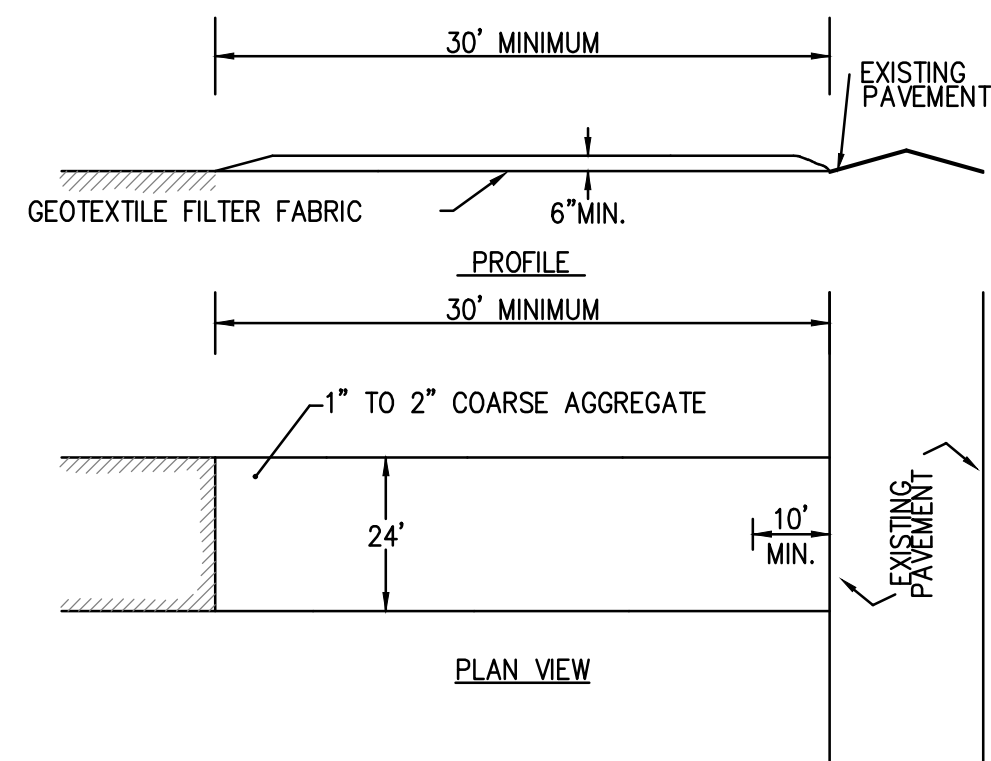
NOT FOR CONSTRUCTION

## EROSION AND SEDIMENTATION CONTROL

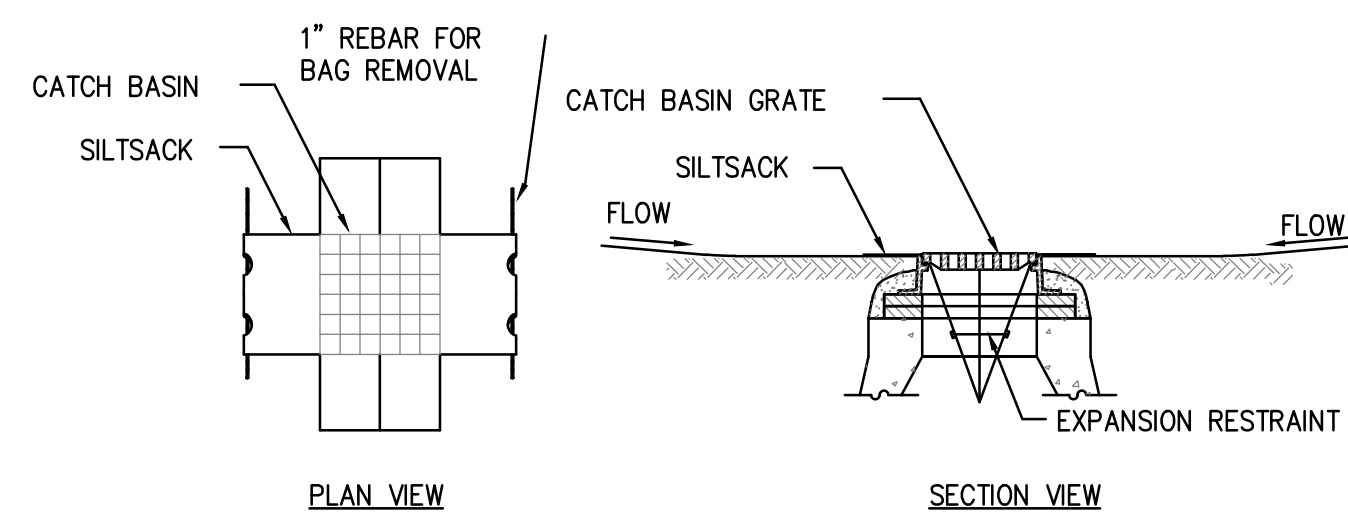
- WIDELY ACCEPTED PRACTICES FOR REDUCING EROSION AND SEDIMENTATION WILL BE EMPLOYED IN THE DEVELOPMENT OF THIS SITE.
- THE DEVELOPMENT OF THE SITE HAS BEEN PLANNED TO ENHANCE THE EXISTING TOPOGRAPHY AND VEGETATIVE COVER. ALL NATURAL DRAINAGE PATTERNS OF THE SITE HAVE BEEN MAINTAINED.
- STEEP SLOPES, WHERE POSSIBLE, WILL NOT BE DISTURBED.
- NATURAL WATERWAYS WILL BE PRESERVED AND PROTECTED, AND EXISTING VEGETATION WILL BE RETAINED AND PROTECTED TO THE EXTENT POSSIBLE.
- THE ROADWAY CONFORMS TO EXISTING LAND CONTOURS WHERE PRACTICAL.
- THE CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBED LAND TO THE EXTENT FEASIBLE.
- SEDIMENT CONTROL MEASURES WILL BE APPLIED TO CONTROL ANY SEDIMENTS THAT MAY BE PRODUCED AS A RESULT OF SITE CONSTRUCTION ACTIVITIES. EROSION AND DEPOSITION OF SEDIMENT WILL BE CLOSELY MONITORED DURING CONSTRUCTION.
- TEMPORARY EROSION CONTROL MEASURES WILL INCLUDE, BUT NOT BE LIMITED TO, HAY BALE CHECK DAMS, SEDIMENT FOREBAYS, STABILIZED CONSTRUCTION ENTRANCES, FILTER FABRIC SILT FENCES, SEEDING AND MULCHING, AND SEEDED FILTER STRIPS.
- TOPSOIL STRIPPED FROM CUT AND FILL AREAS WILL BE STOCKPILED FOR LOAMING AND SEEDING AT LATER CONSTRUCTION STAGES. THE STOCKPILES SHALL BE LOCATED SO AS TO ACT AS TEMPORARY DIVERSIONS, GENERALLY ON THE UPHILL SLOPE.
- ALL CUT AREAS LOCATED AT TOES OF SLOPES AND DITCHES THAT HAVE GRADES EXCEEDING 5% SHALL BE STABILIZED WITH RIP-RAP. THE RIP-RAP SHALL CONSIST OF 50% STONES GREATER THAN 6" IN SIZE. SWALES SHALL BE 6" IN DEPTH AND APPROXIMATELY 5' IN WIDTH. ALL SLOPES WILL BE BLENDED INTO THE EXISTING TOPOGRAPHY TO MINIMIZE IMPACT.
- SITE DEVELOPMENT WILL NOT COMMENCE UNTIL ALL TEMPORARY EROSION CONTROL MEASURES ARE IN PLACE. THESE MEASURES SHALL BE EMPLOYED UNTIL FINAL PAVING AND ADEQUATE VEGETATION HAS BEEN ESTABLISHED.
- REFER TO CONSTRUCTION PHASE BEST MANAGEMENT PRACTICES AS SPECIFIED IN "BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN" PREPARED BY MCKENZIE ENGINEERING GROUP, INC. FOR STRUCTURAL STABILIZATION AND DUST CONTROL EROSION AND SEDIMENTATION CONTROL MEASURES.
- STABILIZATION PRACTICES UTILIZED FOR THE PROJECT WILL INCLUDE TEMPORARY SEEDING, GEOTEXTILES (JUTE MESH), MULCHING, AND PERMANENT SEEDING.

### (SCE) CONSTRUCTION SPECIFICATIONS:

- STONE FOR A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 1 TO 2 INCH STONE, RECLAIMED STONE.
- THE LENGTH OF THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE RESIDENTIAL LOT A 30 FOOT MINIMUM LENGTH WOULD APPLY.
- THE THICKNESS OF THE STONE FOR THE STABILIZED ENTRANCE SHALL NOT BE LESS THAN 6 INCHES.
- THE WIDTH OF THE ENTRANCE SHALL NOT BE LESS THAN A FULL WIDTH OF THE ENTRANCE WHERE INGRESS OR EGRESS OCCURS OR 10 FEET, WHICH EVER IS GREATER.
- GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
- ALL SURFACE WATER THAT IS FLOWING TO OR DEVERTED TOWARDS THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR THE PIPE.
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.



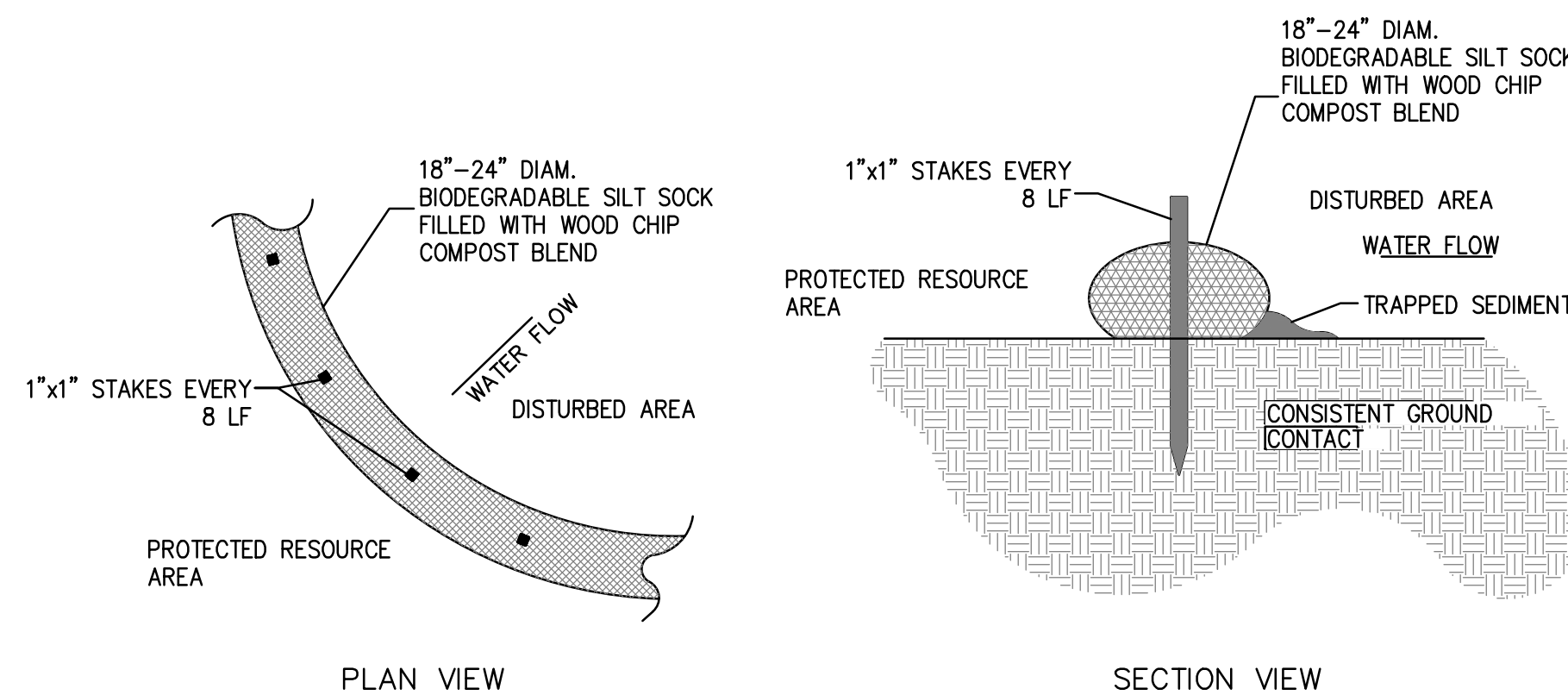
STABILIZED CONSTRUCTION ENTRANCE (SCE) DETAIL  
SCALE: N.T.S.



### SILT SACK SEDIMENT TRAP CONSTRUCTION NOTES:

- INSTALL SILT SACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
- GRATE TO BE PLACED OVER SILT SACK.
- SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.

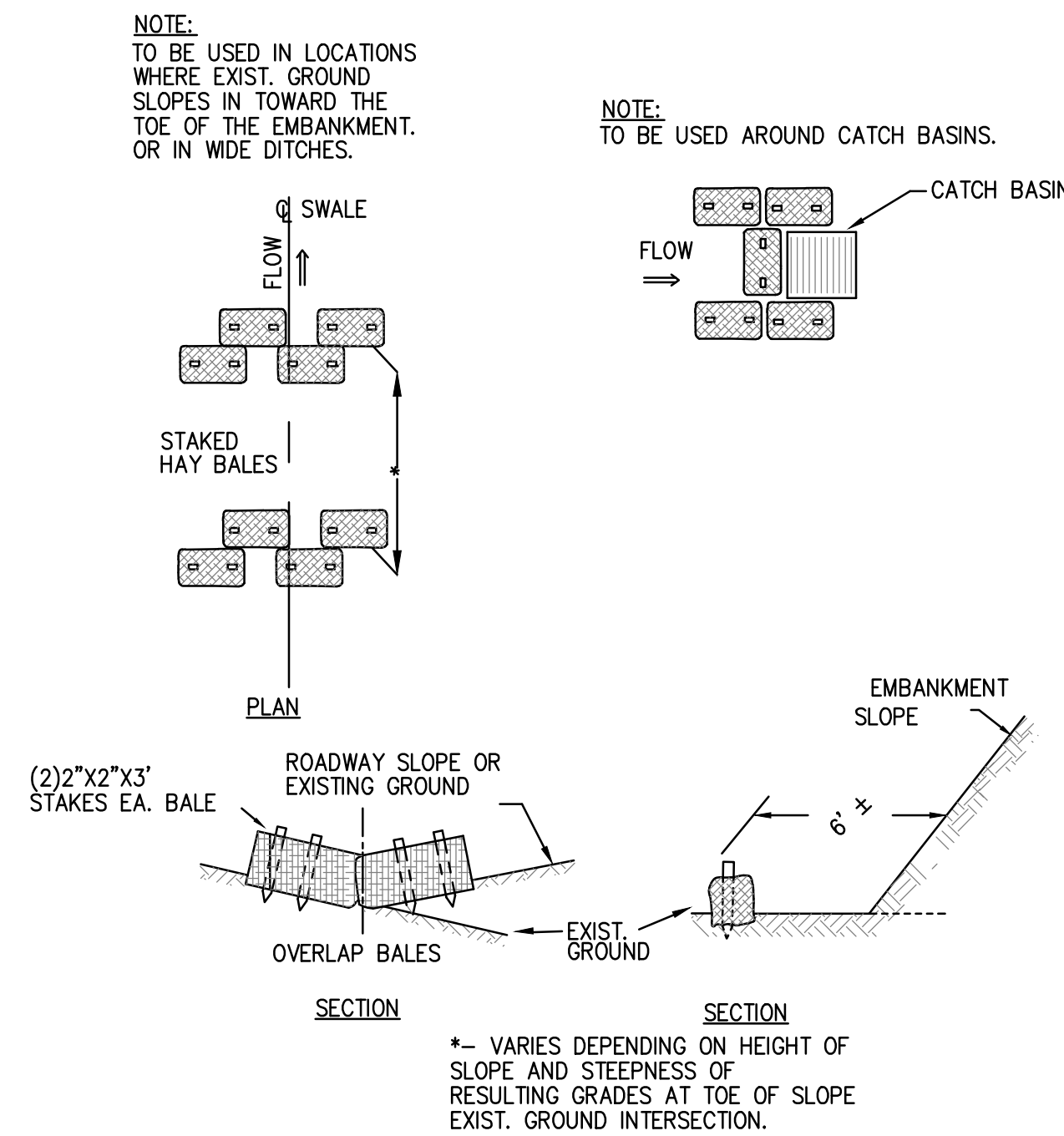
SILT SACK SEDIMENT TRAP  
SCALE: N.T.S.



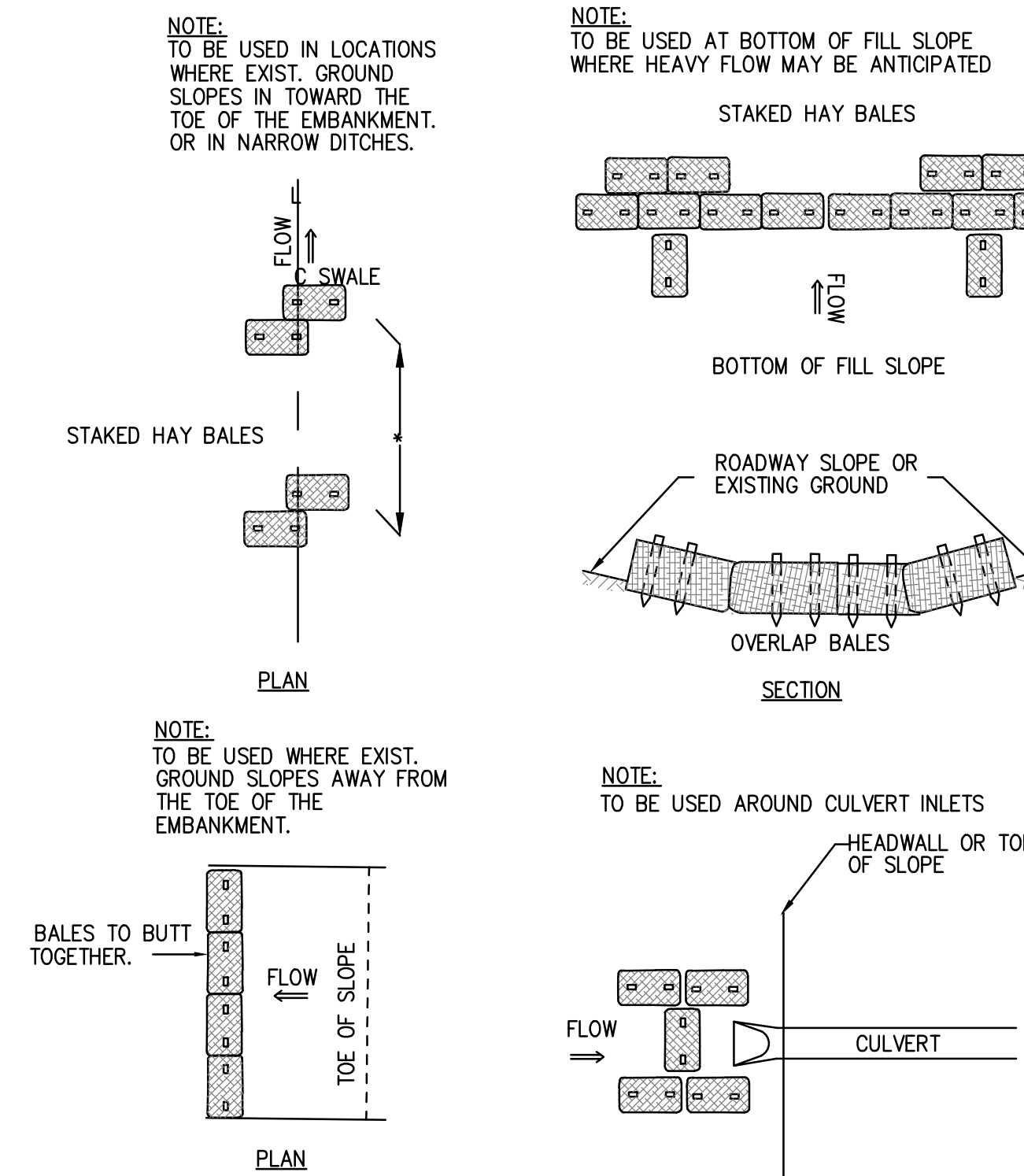
### CONSTRUCTION NOTES:

- SILT SOCKS SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING OR LAPPING THE ADJACENT SECTIONS.
- SILT SOCKS SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN EVERY 8 LF.
- INSPECTION SHALL BE FREQUENT, AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS REQUIRED.
- SILT SOCKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

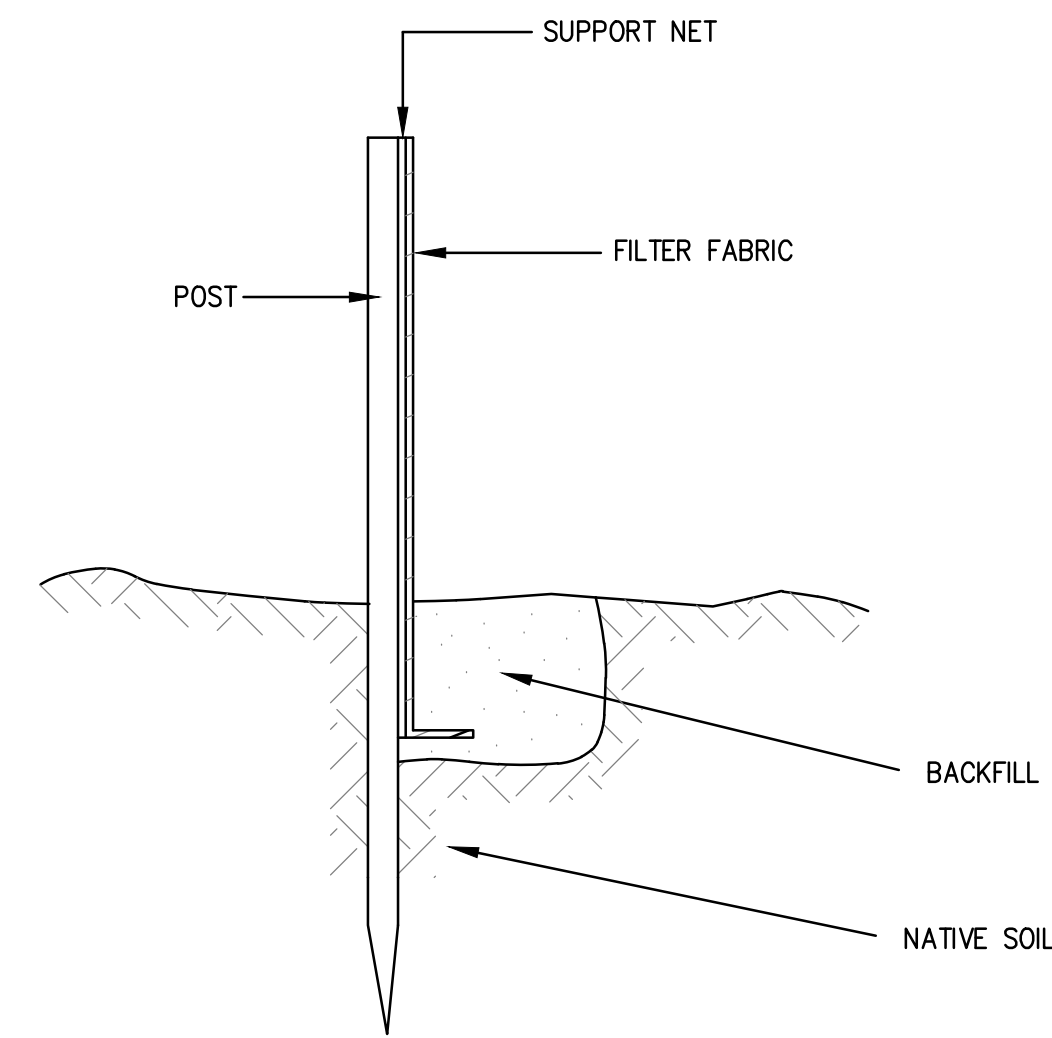
SILT SOCK DETAIL  
SCALE: N.T.S.



TEMPORARY EROSION CONTROL  
SCALE: N.T.S.



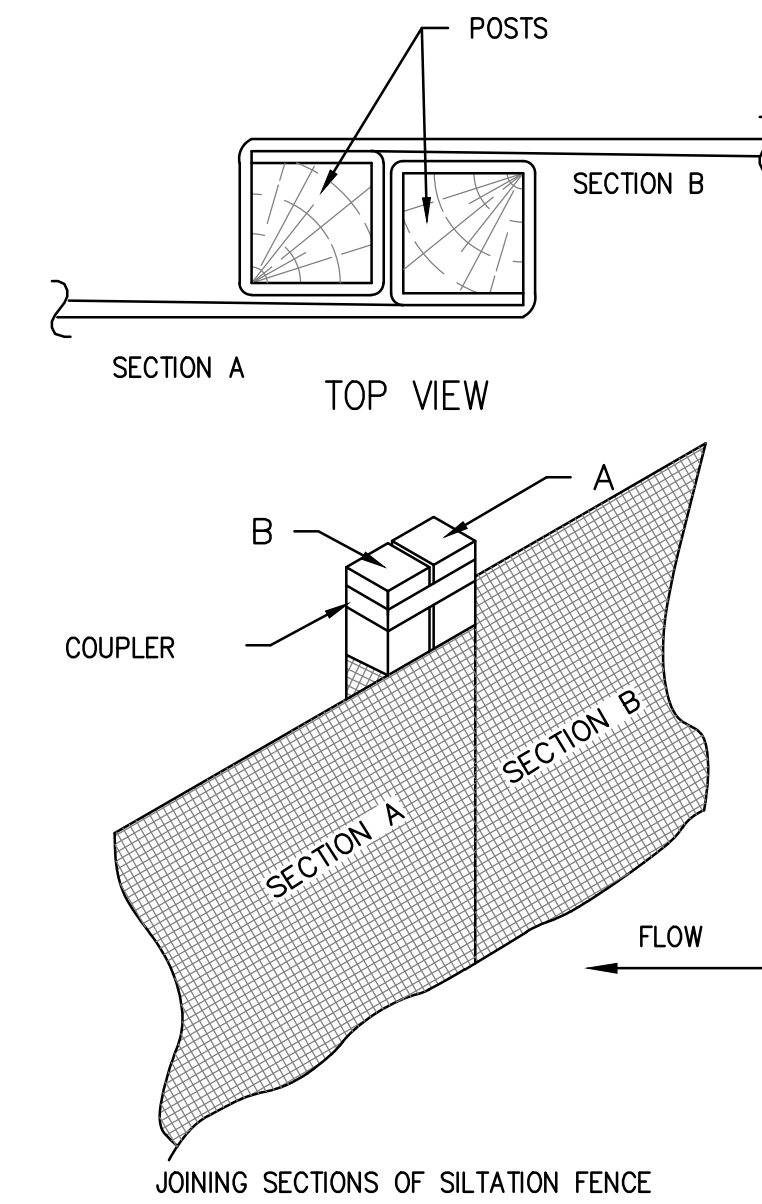
TEMPORARY EROSION CONTROL  
SCALE: N.T.S.



### CONSTRUCTION NOTES:

- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
- FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILTATION FENCE  
SCALE: N.T.S.



### NOTES:

- INSTALL SILT SACK IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
- GRATE TO BE PLACED OVER SILT SACK.
- SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.

REV	DATE	DESCRIPTION	BY	APP
1				



## SITE DEVELOPMENT PLAN PROPOSED MEDICAL BUILDING 20 HENRY GRAF JR. ROAD NEWBURYPORT, MASSACHUSETTS

PROFESSIONAL ENGINEER:

APPLICANT:

SPORTS MEDICINE NORTH  
ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP, INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562

DRAWN BY: ESS

DESIGNED BY: ESS

CHECKED BY: BCM

APPROVED BY: BCM

DATE: MARCH 17, 2020

SCALE:

PROJECT NO.: 219-180




DWG. TITLE:

CONSTRUCTION  
DETAILS

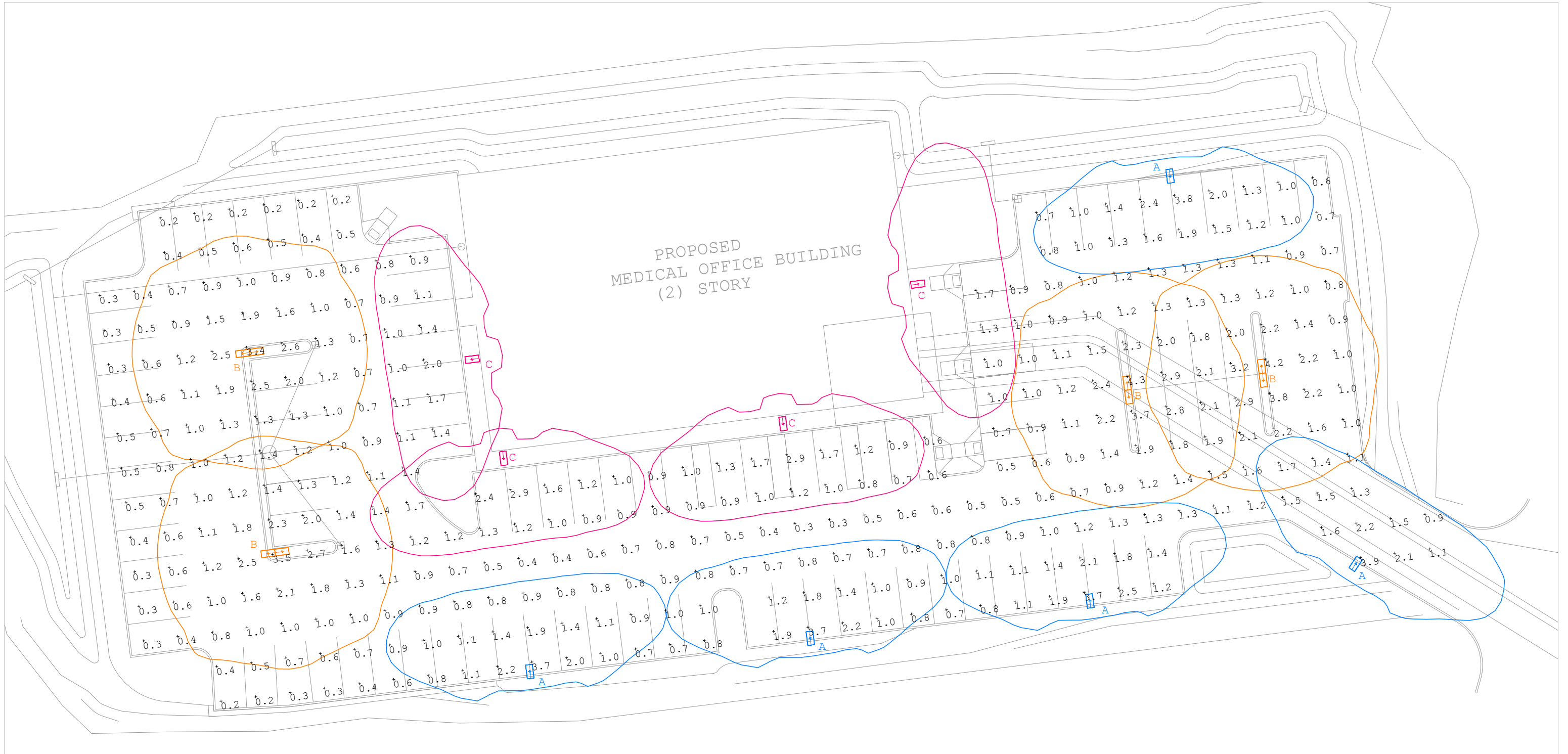
DWG. NO. D-5

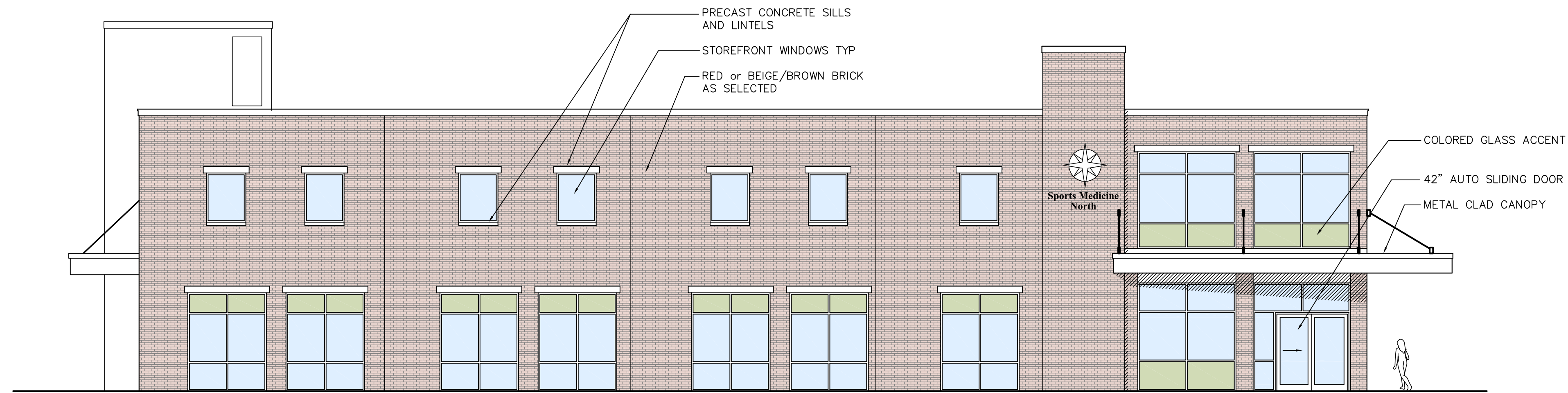
NOT FOR CONSTRUCTION

Photometric Study - Run 1

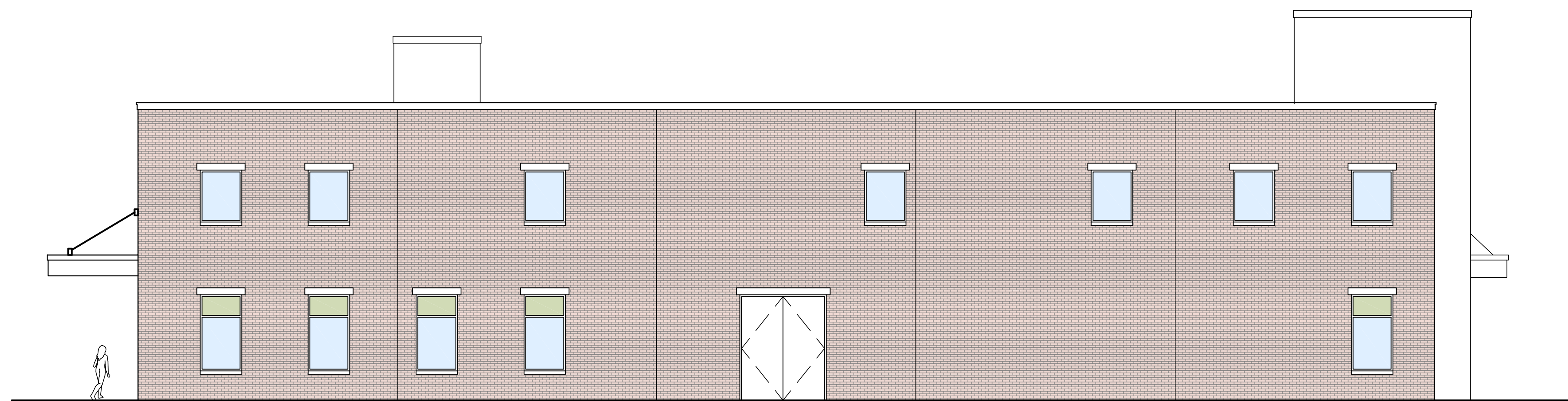
Luminaire Schedule									
Symbol	Qty	Label	Description	Arrangement	IES Class	MH	LLF	Lum. Lumens	Lum. Watts
	5	A	Pole Single: HMC_GL04_525_3K_3E	SINGLE	Type III	16	0.900	3628	27.04
	4	B	Pole Twin: HMC_GL04_525_3K_3F	BACK-BACK	Type IV	16	0.900	3628	27.04
	4	C	Wall Bracket: HMC_GL04_525_3K_3E	SINGLE	Type III	15	0.900	3628	27.04

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Lot	Illuminance	Fc	1.2	4.3	0.2	6.1	21.5

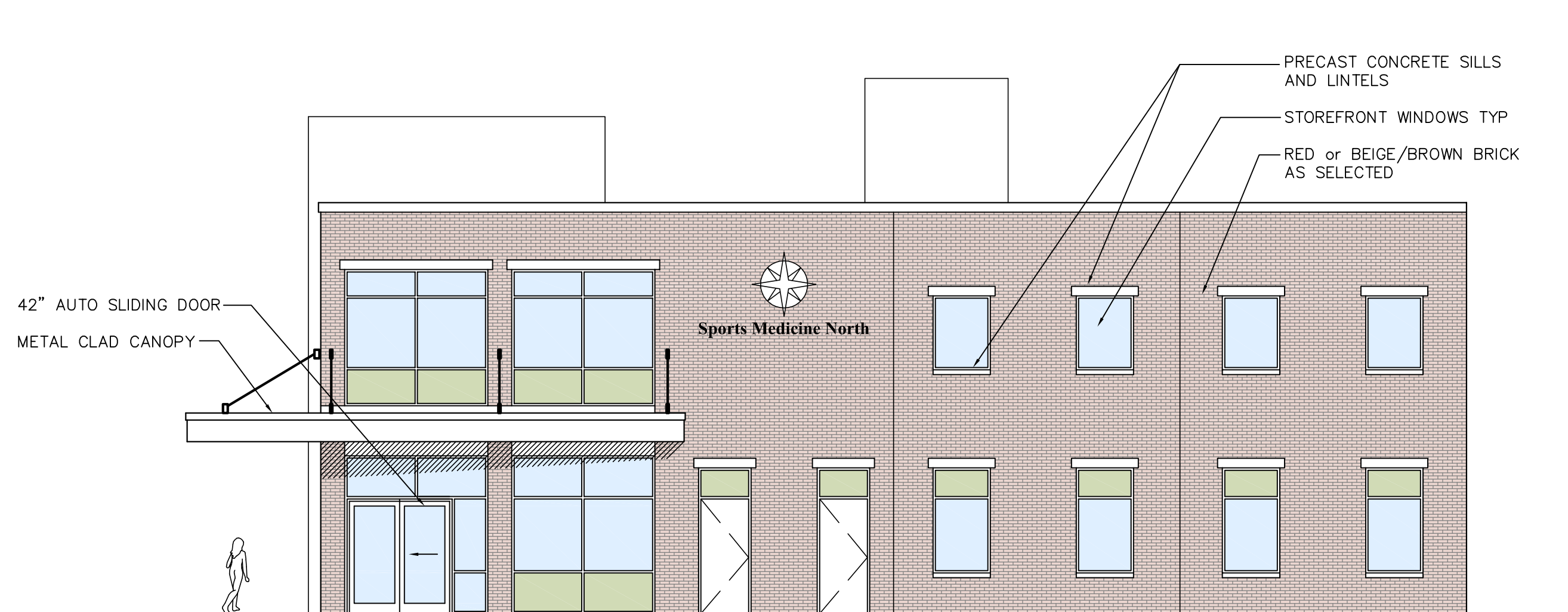




SOUTH ELEVATION (ENTRANCE)



NORTH ELEVATION



EAST ELEVATION (ENTRANCE)



WEST ELEVATION (ENTRANCE)

**PROPOSED NEW FACILITY**  
 for  
**SPORTS MEDICINE NORTH**  
 20 HENRY GRAF JR ROAD  
 NEWBURYPORT, MASSACHUSETTS

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**REVISIONS**

NO.	DATE	DESCRIPTION

**DWG. INFO.**

DATE	3-5-20
SCALE	1/8"=1'-0"
DRAWN	CADD
CHKD	
APPRVD	

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 (A) no person or persons, including any municipal or other public officials, may rely upon the information contained herein, and  
 (B) this plan remains the property of ConSery Group Inc.

**SHEET TITLE:**  
**EXTERIOR ELEVATIONS**

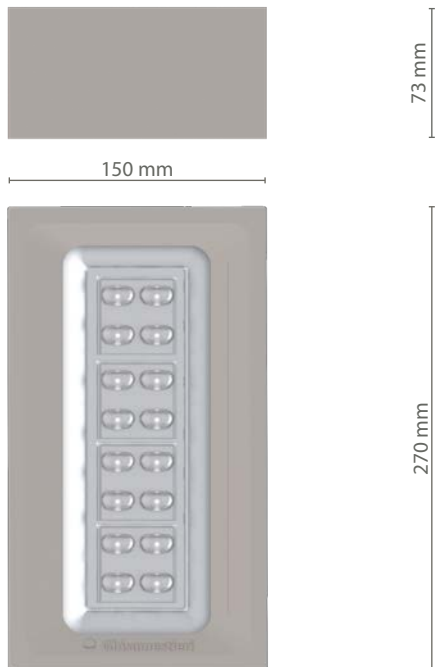
**SHEET & JOB #:**

## AVAILABLE VERSIONS



### Compact

No openable fixture: equipped with outgoing cable and fast connector IP68.

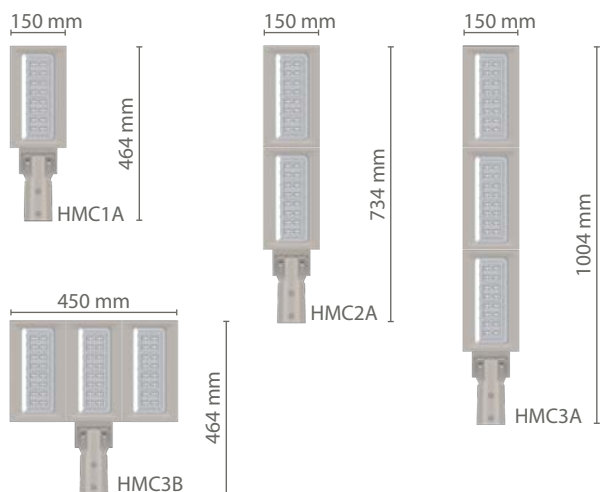


Scale: 1:5

**Max. weight** CXS

4,0 Kg Lateral: 0,02 m<sup>2</sup> | Pian: 0,04 m<sup>2</sup>

## MODULE COMBINING



## FIXING TYPE



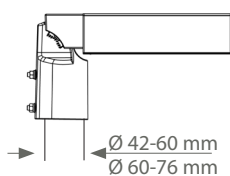
Side



Pole-top

Ø 42-60 mm  
Ø 60-76 mm

Adjustable with 5° step  
+5°  
0°  
-15°



Adjustable with 5° step  
+15°  
0°

## STANDARD

EN 60598-1, EN 60598-2-3, EN 62471, EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3

## CONFORMITY | PROTECTION

### Conformity



### Insulation classes



### Salt spray test

ISO 9227



### Protection classes



### Vibration test passed

IEC 60068-2-6



### Photobiological safety



Classe 0  
Exempt group  
IEC/TR62471

## PLUS



CUTOFF



OPTICAL FLEXIBILITY



LOW GLARE



IPEA MIN

## LIGHTING FIXTURE FEATURES

### General features

Power source:	220-240V   50/60Hz   tolerance +/-10%   other voltages on request
Current supply:	525mA   700 mA (P <sub>max</sub> [3 modules]= 105 W)
Power Factor   THD:	≥0.95   <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h   L90B10   @700mA
Operational temperature (Ta):	T <sub>min</sub> = -40°C T <sub>max</sub> = +55°C   700 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Impulse withstand up to 10kV CM/DM
Standard functions:	Current fixed   Virtual midnight   1-10V   CLO (Details pag.4)

### Materials

Lighting fixture:	Die cast aluminium   EN1706 Extruded aluminium   EN573-3
Optical system:	Nano-optics in PMMA Plastic reflector metallic painted
Screen:	Ultraclear tempered glass   Th. 4mm
Gaskets:	Silicon
Cable gland:	Polyamide PA66   PG16   Ø 14mm MAX   IP 68
Screws and bolts:	AISI 304 stainless steel
Fixture color:	Light grey Ghisamestieri®

## LED FEATURES

LED data 4.000 K - 700mA:	340 lm/LED   180 lm/W   25°C [Tj]   ≤ 3 step macadam
Colour temperature:	3.000 K   4.000 K   5.700 K   CRI ≥ 70
"Flip chip LED" technology:	High performance and high quality LED equipped with gold electrode; high protection against corrosion and color shifting.

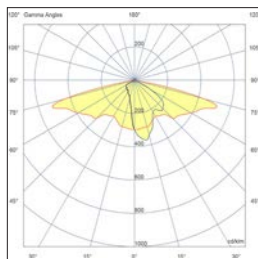
## OPTIONAL

Overcharge protection:	optional - SPD with warning LED CLASS 1   CLASS 2 10kV / 10kA CM/DM
Optional functions:	DALI-DALI2 (Details pag.4)



### PEDESTRIAN PATHS\\ OPTIC TYPES 2

#### TYPE 2A

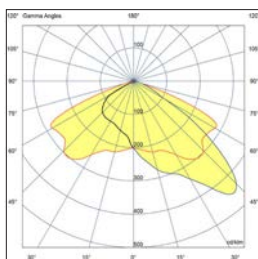


**Asymmetrical light**, designed to suit streets and pedestrian or cycle paths.



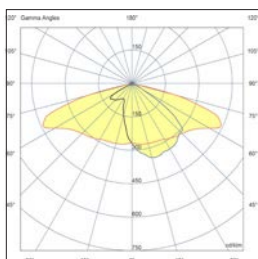
### URBAN AND SUBURBAN STREETS, SQUARES, PARKING LOTS AND ROUNDABOUTS\\ OPTIC TYPES 3

#### TYPE 3A



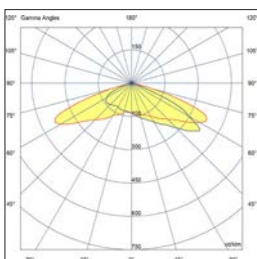
**Asymmetrical light**, designed to suit streets and road wet surface.

#### TYPE 3B



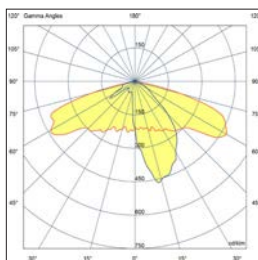
**Asymmetrical light**, designed to suit suburban and urban streets.

#### TYPE 3C



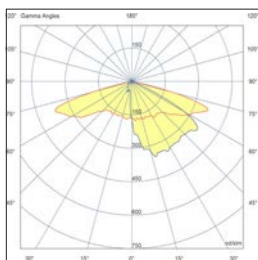
**Asymmetrical light**, designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3D



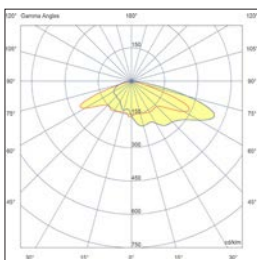
**Asymmetrical light**, designed to suit streets and pedestrian paths.

#### TYPE 3E



**Asymmetrical light**, designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3F

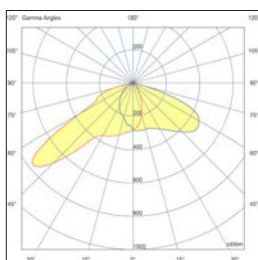


**Asymmetrical light**, designed to suit very large streets and road with a low installation of the lighting fixture, parking lots and roundabouts.



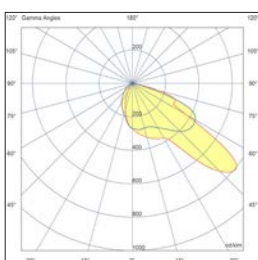
### PEDESTRIAN CROSSINGS\\ OPTIC TYPES 4

#### TYPE 4A



**Asymmetrical light**, designed to suite installation to pedestrian crossings.

#### TYPE 4B

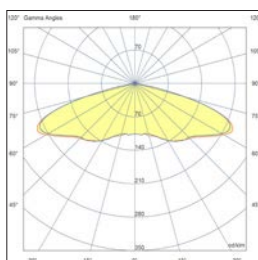


**Asymmetrical light**, designed to suite installation to pedestrian crossings.



### PARKS AND SQUARES\\ OPTIC TYPES 5

#### TYPE 5A



**Symmetrical light**, designed to be installed in parks, squares, parking lots and other large surfaces.

### APPLICATION EXAMPLES\\



TYPE 2A | TYPE 3D



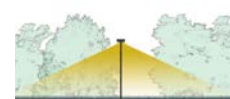
TYPE 2A | TYPE 3D



TYPE 3A | TYPE 3B



TYPE 3C | TYPE 3E | TYPE 3F



TYPE 5A



TYPE 4A | TYPE 4B



TYPE 4A + TYPE 4B





The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, color rendering index CRI 70 min. and a junction temperature  $t_j$  of 25°C. The LED nominal data are extrapolated from the manufacturer documentations.

The lighting fixture measured data refers to GHISAMESTIERI products in a standard version, with 4000 K color temperature, optica type <<Ottica>> and an ambient temperature  $t_a$  of 25 °C.

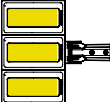
Ghisamestieri offers the possibility of driving the device with custom currents (\*).

To obtain luminous fluxes and efficiencies of the lighting fixture in case of optic type and/or color temperature and/or color rendering index different from the standard use the conversion factors shown in the tables.

### LED modules nominal data (4000 K | CRI 70 min. | $t_j=25^\circ$ )

LED code	I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL04 	525	4255	23,0	185
	700	5394	31,0	174
GL08 	525	8510	46,0	185
	700	10788	62,0	174
GL12  	525	12765	69,0	185
	700	16008	92,0	174

### Lighting fixture measured data (4000 K | OTTICA 3B | $t_a=25^\circ$ )

Order code:	(*) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
HMC1A_GL04 	525	3652	27,0	135
	700 (max)	4723	36,0	131
HMC2A_GL08 	525	7354	52,5	140
	700 (max)	9511	70,0	136
HMC3A_GL12  HMC3B_GL12 	525	11031	77,0	143
	700 (max)	14267	103,0	139

#### OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1A (*)	1,00
2A (*)	0,99
3A   3C   3D   3E   3F	0,99
4A   4B	0,98
5A (*)	1,01

#### Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
2.200 (**)	0,70
3.000	0,94
5.700	1,01

#### CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,93

(\*) See pag.2 to check the optic type availability.

(\*\*) See pag.1 to check the colour temperature availability.



## Functions

### Standard functions

#### Fixed Output

The lighting fixture is set to use a fixed current among the standard ones indicated in the tables on page 3. It is possible to set other currents on customer request (custom).

#### Virtual midnight | Automatic lighting control

The driver is programmed to automatically switch the light On or Off based on the time of the day ensuring high energy saving.

The maximum output is usually set during the first and last hours of operation that statistically are proven to have higher traffic, it will then decrease during the middle hours when there is less traffic. The system is able to automatically regulate itself, identifying the average between the instant it turns on and turns off. This is called "virtual midnight" and is the reference point for reducing the light emission based on the desired profile. The output will automatically adapt to the length of the night throughout the year.

#### 1-10V | Flux control by analogic control

It is possible to adjust the amount of luminous output by means of an analog input signal that has a minimum level of 1V and maximum of 10V. The device is fitted with L-N-1 / 10V cable connection.

#### CLO | Costant lumen output

Considering LED performance deteriorates with use and time, it may be compensated by using a lower than maximum flux output and maintaining it constant in time by progressively increasing the current. In this case maintenance and management costs of the systems are considerably lower.

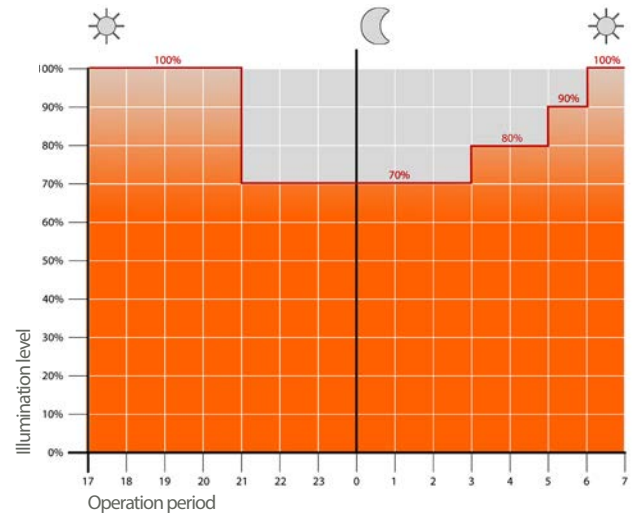
### Optional functions

#### DALI - DALI2 | Controllo e programmazione digitale

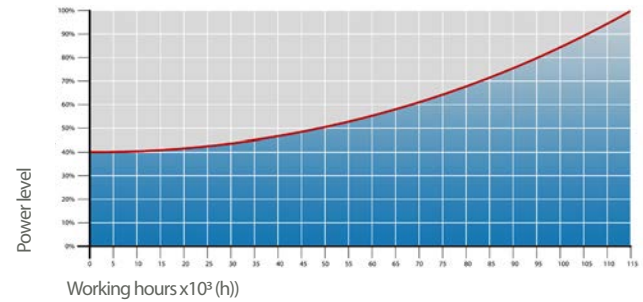
On request, the lighting body can be supplied with a DALI interface. The DALI system allows a lighting system to be controlled by providing control and diagnostic functions.

#### DALI SENSOR

With the DALI SENSOR interface it is possible to manage the functions of the DALI - DALI2 protocol. In addition, there is a low voltage AUX switch to manage remote control systems and external sensors in a Smart City perspective.



Example of 4-step adjustment with virtual midnight



CLO | Costant lumen output

## Protection cycles

Ghisamestieri works with cast iron, steel and aluminum. The materials are selected and processed to maximize performance and quality.

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting;
- First epoxy layer application followed by: Wilting > Drying > Cooling;
- Acrylic glaze layer application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting;
- Phosphoric pickling bath at a ph level ranging from 1.5 to 3;
- Rinsing with demineralised water;
- First powder layer application;
- Kiln firing;
- Application of a final powder layer;
- Kiln roasting of the final powder layer at 180°;
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting;
- Mono-component dip galvanizing followed by: Wilting > Drying > Cooling;
- Epoxy micaceous primer application followed by: Wilting > Drying > Cooling;
- Acrylic enamel application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting;
- Hot pickling bath in a zinc-based phosphodegreasing solution;
- Specific process for the preparation of surfaces before painting;
- Washing with water;
- Rinsing with demineralised water and subsequent drying;
- First powder layer application followed by kiln baking at 180°;
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by salt spray tests performed in accordance with standard ISO 9227:2017 Neutral Salt Spray test (NSS).

The test was carried out for 8.000 hours at 35 °C and demonstrated through the report test released.



**Ghisamestieri the green way of light s.r.l**

Legal headquarters:  
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Administrative and operational headquarters:  
Via Grande n°226 • 47032 Bertinoro (FC)

T +39 0543 462611  
F +39 0543 449111

**info@ghisamestieri.it**  
**www.ghisamestieri.it**

# Hulla Regolo pole 050

Product code: **HRP050**

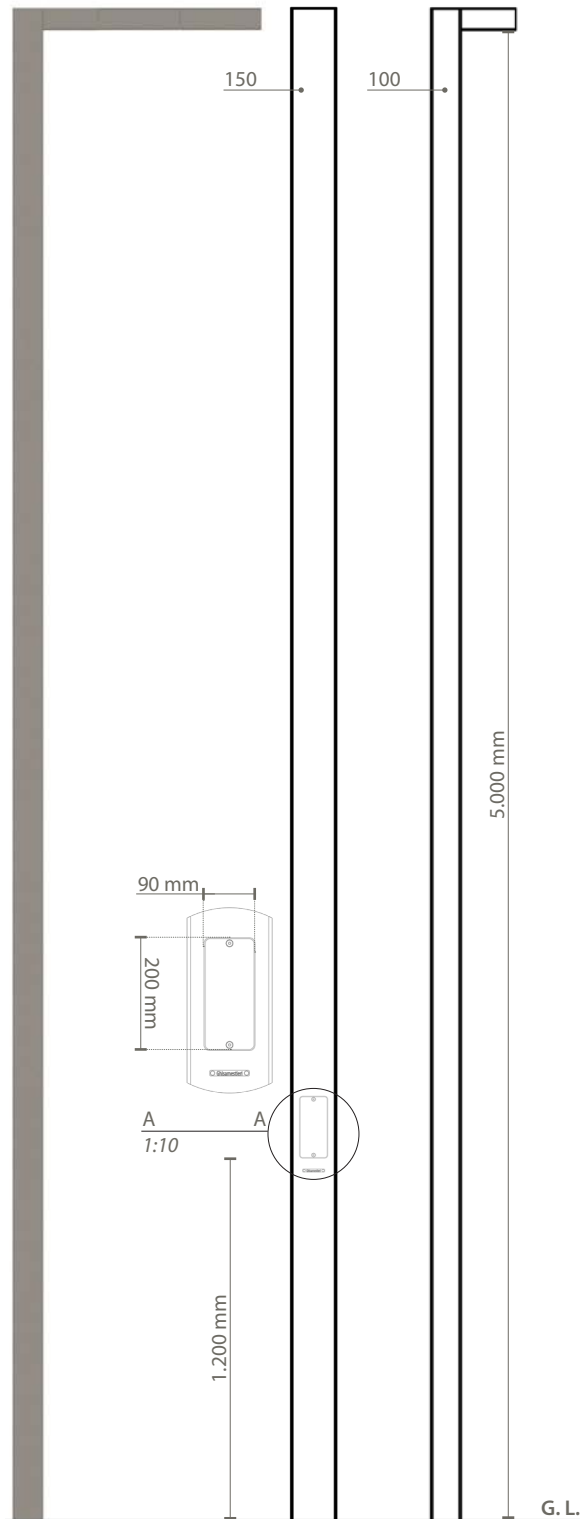


Flange  
HRP050\_F



Foundation  
HRP050\_M

S235 cast iron pole hot galvanized and powder coated, prepared for lighting fixture Hulla installation. The pole is equipped with an M12 screw, steel inox AISI 304 (grounding). Pole-top bracket: for 1 to 3 Hulla modules



Scale: 1:25

## Conformity



## Geometry and mechanical features

Total height:	5.000 mm
Total weight:	⊕ flange: 72 kg
	⊕ foundation: 72 Kg

## Materials and color

Body:	Steel S235 - hot galvanized   EN 10027 - EN1461
Color:	Light grey Ghisamestieri®

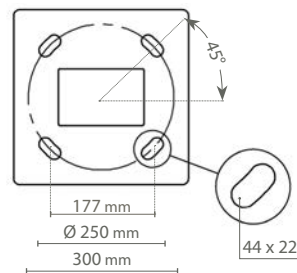
## Terminal block M5 4x16mm<sup>2</sup>



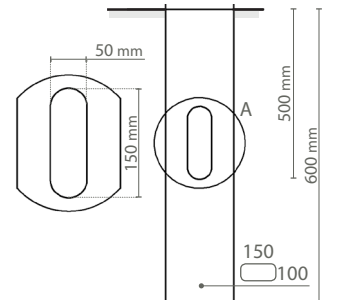
## Fixing type



Flange



Foundation

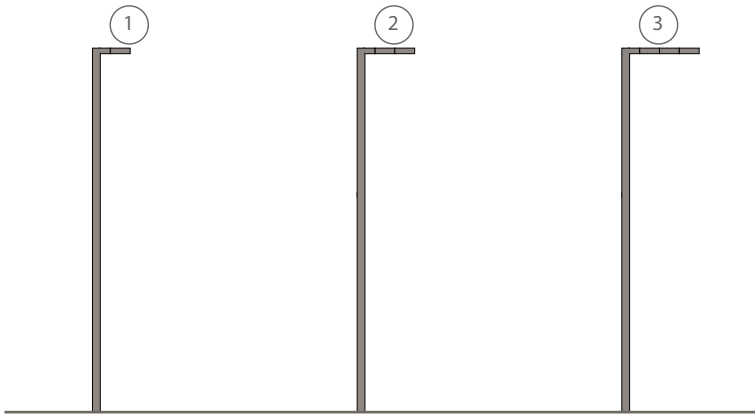


Supplied:  
Heat-shrink sheath

## Composition code

### Single pole

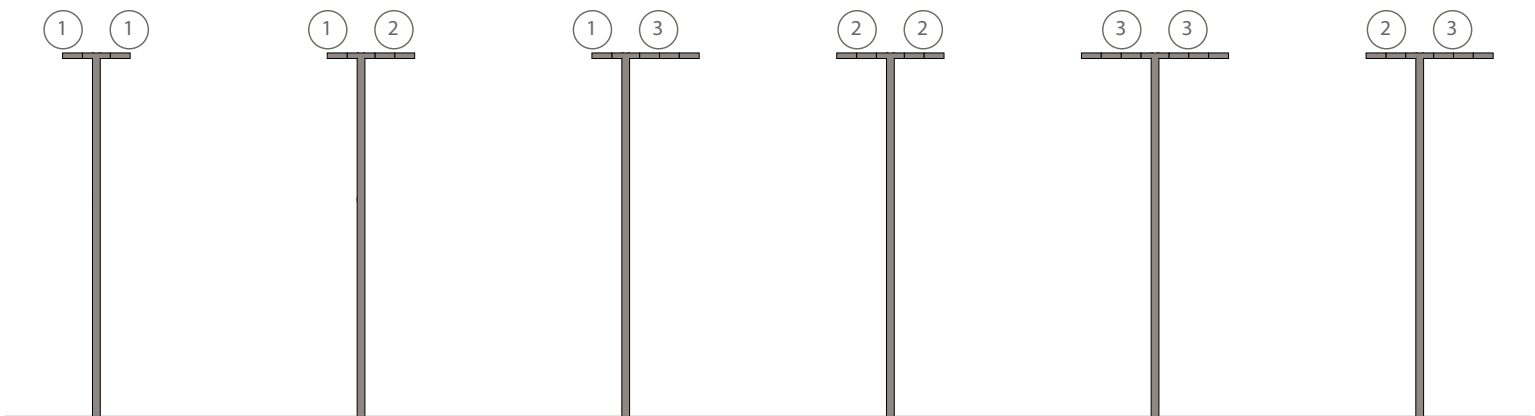
⊥ HRP050\_F\_01    ⊕ HRP050\_M\_01



⊥ HRP050\_F\_01\_01    ⊥ HRP050\_F\_01\_02    ⊥ HRP050\_F\_01\_03  
 ⊕ HRP050\_M\_01\_01    ⊕ HRP050\_M\_01\_02    ⊕ HRP050\_M\_01\_03

### Double pole

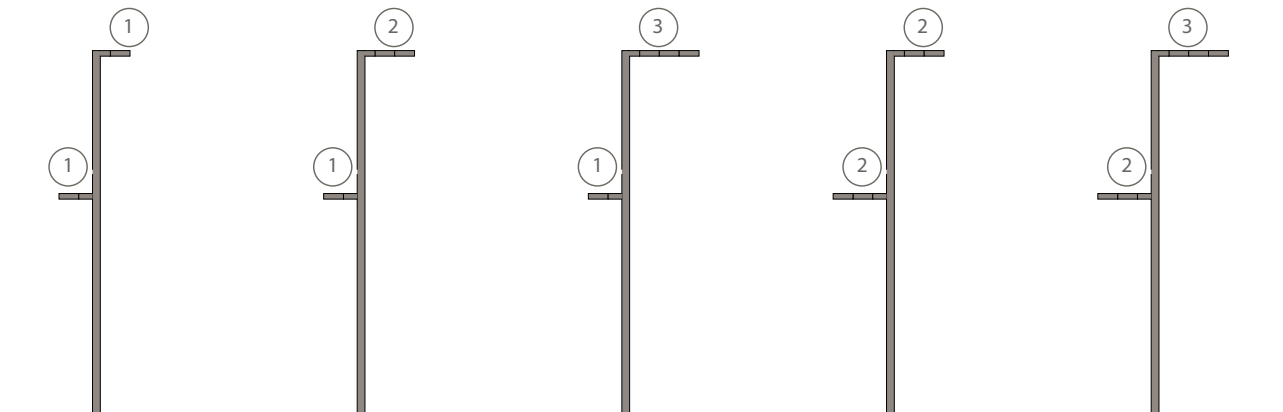
⊥ HRP050\_F\_02    ⊕ HRP050\_M\_02



⊥ HRP050\_F\_02\_01\_01    ⊥ HRP050\_F\_02\_02\_01    ⊥ HRP050\_F\_02\_03\_01    ⊥ HRP050\_F\_02\_02\_02    ⊥ HRP050\_F\_02\_03\_03    ⊥ HRP050\_F\_02\_03\_02  
 ⊕ HRP050\_M\_02\_01\_01    ⊕ HRP050\_M\_02\_02\_01    ⊕ HRP050\_M\_02\_03\_01    ⊕ HRP050\_M\_02\_02\_02    ⊕ HRP050\_M\_02\_03\_03    ⊕ HRP050\_M\_02\_03\_02

### Split-level pole

⊥ HRP050\_F\_07    ⊕ HRP050\_M\_07



⊥ HRP050\_F\_07\_01\_01    ⊥ HRP050\_F\_07\_02\_01    ⊥ HRP050\_F\_07\_03\_01    ⊥ HRP050\_F\_07\_02\_02    ⊥ HRP050\_F\_07\_03\_02  
 ⊕ HRP050\_M\_07\_01\_01    ⊕ HRP050\_M\_07\_02\_01    ⊕ HRP050\_M\_07\_03\_01    ⊕ HRP050\_M\_07\_02\_02    ⊕ HRP050\_M\_07\_03\_02

## Protection cycles

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting
- First epoxy layer application followed by:  
Wilting > Drying > Cooling
- Acrylic glaze layer application followed by:  
Wilting > Drying > Cooling
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting
- Phosphoric pickling bath at a pH level ranging from 1.5 to 3
- Rinsing with demineralised water
- First powder layer application
- Kiln firing
- Application of a final powder layer
- Kiln roasting of the final powder layer at 180°
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting
- Mono-component dip galvanizing followed by:  
Wilting > Drying > Cooling
- Epoxy micaceous primer application followed by:  
Wilting > Drying > Cooling
- Acrylic enamel application followed by:  
Wilting > Drying > Cooling.
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting
- Hot pickling bath in a zinc-based phosphodegreasing solution
- Phospho-chromatation for surfaces clearing
- Washing with water
- Rinsing with demineralised water and subsequent drying
- First powder layer application followed by kiln baking at 180°
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by the successful results of specific salt spray test (all products exceeded widely 2.500 hours) and the strictest international tests, among which FLORIDA TEST.

The salt spray test is made in accordance with standard UNI EN ISO 9227.



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T +39 0543 462611  
F +39 0543 449111

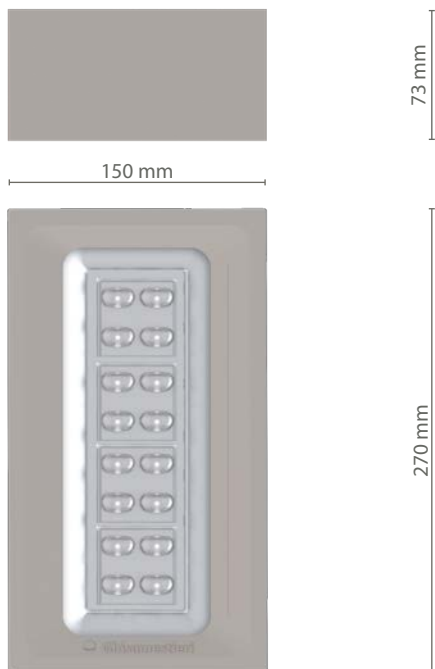
[info@ghisamestieri.it](mailto:info@ghisamestieri.it)  
[www.ghisamestieri.it](http://www.ghisamestieri.it)

## AVAILABLE VERSIONS



### Compact

No openable fixture: equipped with outgoing cable and fast connector IP68.

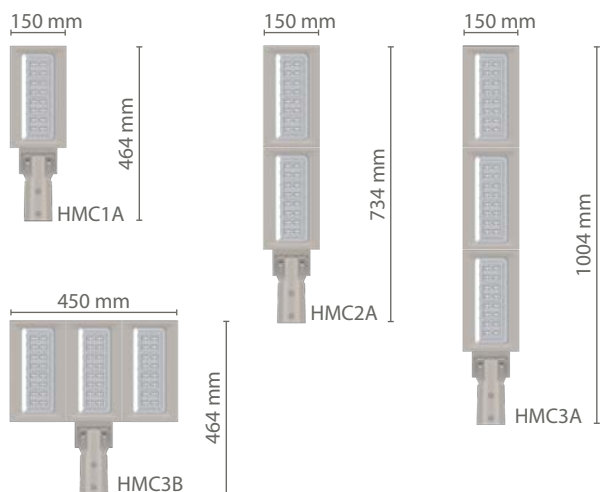


Scale: 1:5

**Max. weight** CXS

4,0 Kg Lateral: 0,02 m<sup>2</sup> | Pian: 0,04 m<sup>2</sup>

## MODULE COMBINING



## FIXING TYPE

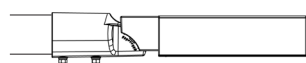


Side

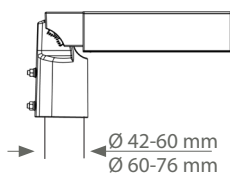


Pole-top

Ø 42-60 mm  
Ø 60-76 mm



Adjustable with 5° step  
+5°  
0°  
-15°



Adjustable with 5° step  
+15°  
0°

## STANDARD

EN 60598-1, EN 60598-2-3, EN 62471, EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3

## CONFORMITY | PROTECTION

### Conformity



### Insulation classes



### Salt spray test

ISO 9227



8000 hr

### Protection classes



### Vibration test passed

IEC 60068-2-6



### Photobiological safety



Classe 0  
Exempt group  
IEC/TR62471

## PLUS



CUTOFF



OPTICAL FLEXIBILITY



LOW GLARE



IPEA MIN

## LIGHTING FIXTURE FEATURES

### General features

Power source:	220-240V   50/60Hz   tolerance +/-10%   other voltages on request
Current supply:	525mA   700 mA (P <sub>max</sub> [3 modules]= 105 W)
Power Factor   THD:	≥0.95   <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h   L90B10   @700mA
Operational temperature (Ta):	T <sub>min</sub> = -40°C T <sub>max</sub> = +55°C   700 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Impulse withstand up to 10kV CM/DM
Standard functions:	Current fixed   Virtual midnight   1-10V   CLO (Details pag.4)

### Materials

Lighting fixture:	Die cast aluminium   EN1706 Extruded aluminium   EN573-3
Optical system:	Nano-optics in PMMA Plastic reflector metallic painted
Screen:	Ultraclear tempered glass   Th. 4mm
Gaskets:	Silicon
Cable gland:	Polyamide PA66   PG16   Ø 14mm MAX   IP 68
Screws and bolts:	AISI 304 stainless steel
Fixture color:	Light grey Ghisamestieri®

## LED FEATURES

LED data 4.000 K - 700mA:	340 lm/LED   180 lm/W   25°C [Tj]   ≤ 3 step macadam
Colour temperature:	3.000 K   4.000 K   5.700 K   CRI ≥ 70
"Flip chip LED" technology:	High performance and high quality LED equipped with gold electrode; high protection against corrosion and color shifting.

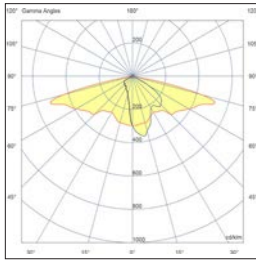
## OPTIONAL

Overcharge protection:	optional - SPD with warning LED CLASS 1   CLASS 2 10kV / 10kA CM/DM
Optional functions:	DALI-DALI2 (Details pag.4)



### PEDESTRIAN PATHS\\ OPTIC TYPES 2

#### TYPE 2A

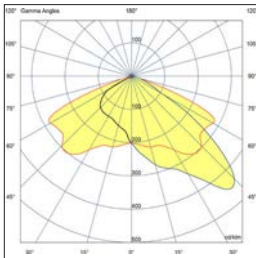


**Asymmetrical light,** designed to suit streets and pedestrian or cycle paths.



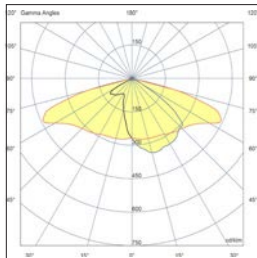
### URBAN AND SUBURBAN STREETS, SQUARES, PARKING LOTS AND ROUNDABOUTS\\ OPTIC TYPES 3

#### TYPE 3A



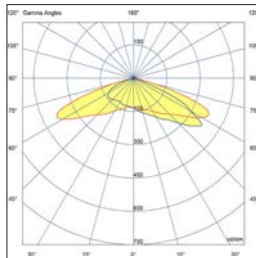
**Asymmetrical light,** designed to suit streets and road wet surface.

#### TYPE 3B



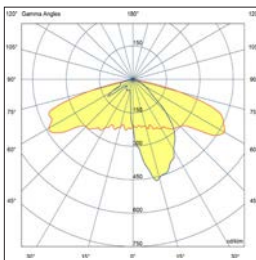
**Asymmetrical light,** designed to suit suburban and urban streets.

#### TYPE 3C



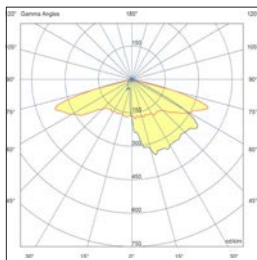
**Asymmetrical light,** designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3D



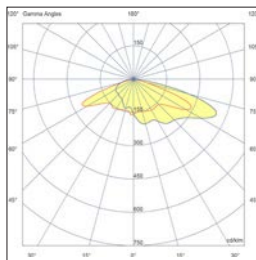
**Asymmetrical light,** designed to suit streets and pedestrian paths.

#### TYPE 3E



**Asymmetrical light,** designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3F

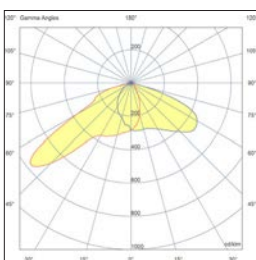


**Asymmetrical light,** designed to suit very large streets and road with a low installation of the lighting fixture, parking lots and roundabouts.



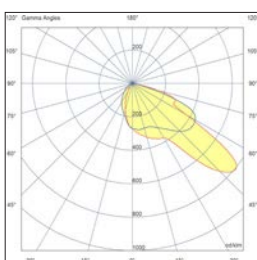
### PEDESTRIAN CROSSINGS\\ OPTIC TYPES 4

#### TYPE 4A



**Asymmetrical light,** designed to suite installation to pedestrian crossings.

#### TYPE 4B

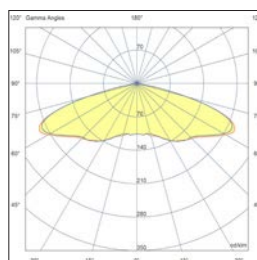


**Asymmetrical light,** designed to suite installation to pedestrian crossings.



### PARKS AND SQUARES\\ OPTIC TYPES 5

#### TYPE 5A



**Symmetrical light,** designed to be installed in parks, squares, parking lots and other large surfaces.

### APPLICATION EXAMPLES\\



TYPE 2A | TYPE 3D



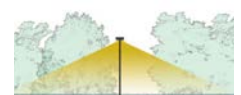
TYPE 2A | TYPE 3D



TYPE 3A | TYPE 3B



TYPE 3C | TYPE 3E | TYPE 3F



TYPE 5A



TYPE 4A | TYPE 4B



TYPE 4A + TYPE 4B




The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, color rendering index CRI 70 min. and a junction temperature  $t_j$  of 25°C. The LED nominal data are extrapolated from the manufacturer documentations.

The lighting fixture measured data refers to GHISAMESTIERI products in a standard version, with 4000 K color temperature, optica type <<Ottica>> and an ambient temperature  $t_a$  of 25 °C.


Ghisamestieri offers the possibility of driving the device with custom currents (\*).

To obtain luminous fluxes and efficiencies of the lighting fixture in case of optic type and/or color temperature and/or color rendering index different from the standard use the conversion factors shown in the tables.

### LED modules nominal data (4000 K | CRI 70 min. | $t_j=25^\circ$ )

LED code	I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL04 	525	4255	23,0	185
	700	5394	31,0	174
GL08 	525	8510	46,0	185
	700	10788	62,0	174
GL12 	525	12765	69,0	185
	700	16008	92,0	174

### Lighting fixture measured data (4000 K | OTTICA 3B | $t_a=25^\circ$ )

Order code:	(*) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
HMC1A_GL04 	525	3652	27,0	135
	700 (max)	4723	36,0	131
HMC2A_GL08 	525	7354	52,5	140
	700 (max)	9511	70,0	136
HMC3A_GL12    HMC3B_GL12 	525	11031	77,0	143
	700 (max)	14267	103,0	139

#### OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1A (*)	1,00
2A (*)	0,99
3A   3C   3D   3E   3F	0,99
4A   4B	0,98
5A (*)	1,01

#### Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
2.200 (**)	0,70
3.000	0,94
5.700	1,01

#### CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,93

(\*) See pag.2 to check the optic type availability.

(\*\*) See pag.1 to check the colour temperature availability.



## Functions

### Standard functions

#### Fixed Output

The lighting fixture is set to use a fixed current among the standard ones indicated in the tables on page 3. It is possible to set other currents on customer request (custom).

#### Virtual midnight | Automatic lighting control

The driver is programmed to automatically switch the light On or Off based on the time of the day ensuring high energy saving.

The maximum output is usually set during the first and last hours of operation that statistically are proven to have higher traffic, it will then decrease during the middle hours when there is less traffic. The system is able to automatically regulate itself, identifying the average between the instant it turns on and turns off. This is called "virtual midnight" and is the reference point for reducing the light emission based on the desired profile. The output will automatically adapt to the length of the night throughout the year.

#### 1-10V | Flux control by analogic control

It is possible to adjust the amount of luminous output by means of an analog input signal that has a minimum level of 1V and maximum of 10V. The device is fitted with L-N-1 / 10V cable connection.

#### CLO | Costant lumen output

Considering LED performance deteriorates with use and time, it may be compensated by using a lower than maximum flux output and maintaining it constant in time by progressively increasing the current. In this case maintenance and management costs of the systems are considerably lower.

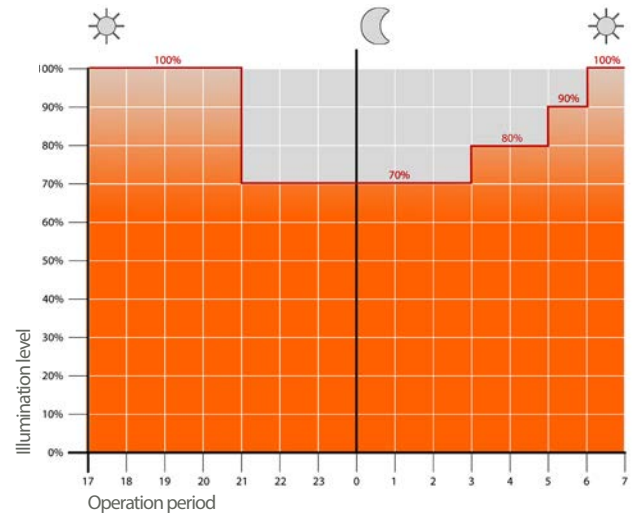
### Optional functions

#### DALI - DALI2 | Controllo e programmazione digitale

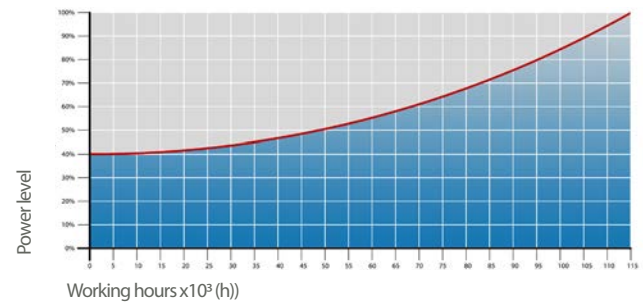
On request, the lighting body can be supplied with a DALI interface. The DALI system allows a lighting system to be controlled by providing control and diagnostic functions.

#### DALI SENSOR

With the DALI SENSOR interface it is possible to manage the functions of the DALI - DALI2 protocol. In addition, there is a low voltage AUX switch to manage remote control systems and external sensors in a Smart City perspective.



Example of 4-step adjustment with virtual midnight



CLO | Costant lumen output

## Protection cycles

Ghisamestieri works with cast iron, steel and aluminum. The materials are selected and processed to maximize performance and quality.

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting;
- First epoxy layer application followed by: Wilting > Drying > Cooling;
- Acrylic glaze layer application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting;
- Phosphoric pickling bath at a pH level ranging from 1.5 to 3;
- Rinsing with demineralised water;
- First powder layer application;
- Kiln firing;
- Application of a final powder layer;
- Kiln roasting of the final powder layer at 180°;
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting;
- Mono-component dip galvanizing followed by: Wilting > Drying > Cooling;
- Epoxy micaceous primer application followed by: Wilting > Drying > Cooling;
- Acrylic enamel application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting;
- Hot pickling bath in a zinc-based phosphodegreasing solution;
- Specific process for the preparation of surfaces before painting;
- Washing with water;
- Rinsing with demineralised water and subsequent drying;
- First powder layer application followed by kiln baking at 180°;
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by salt spray tests performed in accordance with standard ISO 9227:2017 Neutral Salt Spray test (NSS).

The test was carried out for 8.000 hours at 35 °C and demonstrated through the report test released.



**Ghisamestieri the green way of light s.r.l.**

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**www.ghisamestieri.it**

# Hulla Regolo pole 050

Product code: **HRP050**

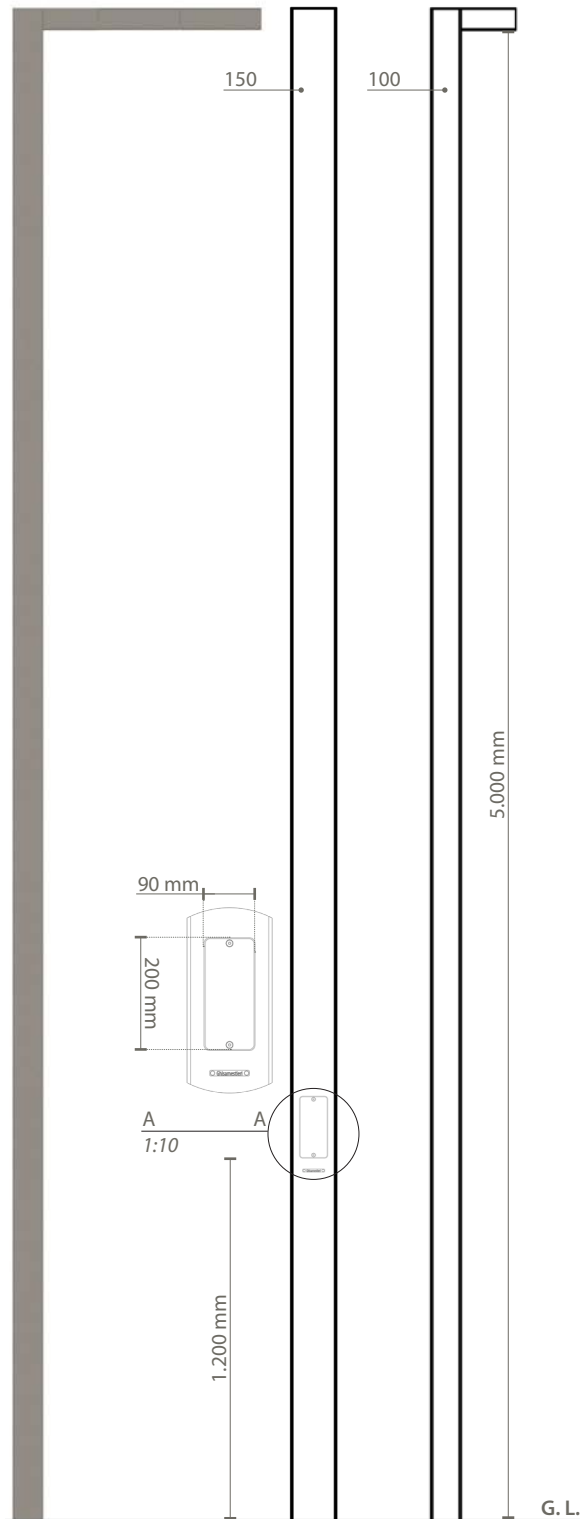


Flange  
HRP050\_F



Foundation  
HRP050\_M

S235 cast iron pole hot galvanized and powder coated, prepared for lighting fixture Hulla installation. The pole is equipped with an M12 screw, steel inox AISI 304 (grounding). Pole-top bracket: for 1 to 3 Hulla modules



Scale: 1:25

## Conformity



## Geometry and mechanical features

Total height:	5.000 mm
Total weight:	⊕ flange: 72 kg
	⊕ foundation: 72 Kg

## Materials and color

Body:	Steel S235 - hot galvanized   EN 10027 - EN1461
Color:	Light grey Ghisamestieri®

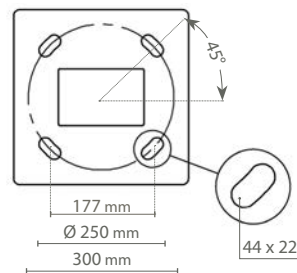
## Terminal block M5 4x16mm<sup>2</sup>



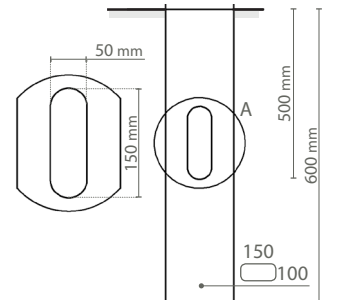
## Fixing type



Flange



Foundation

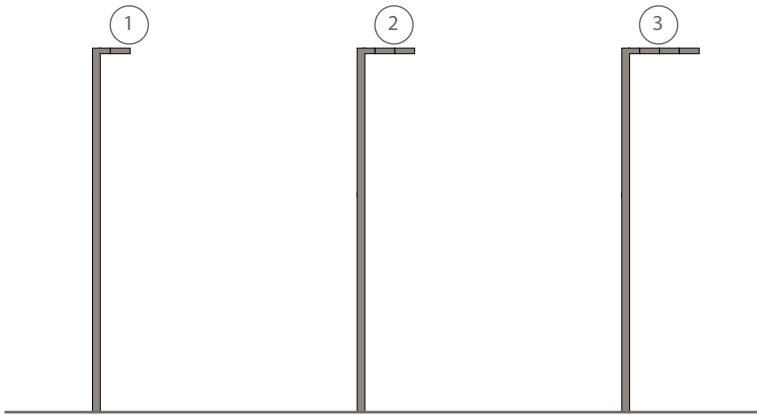


Supplied:  
Heat-shrink sheat

## Composition code

### Single pole

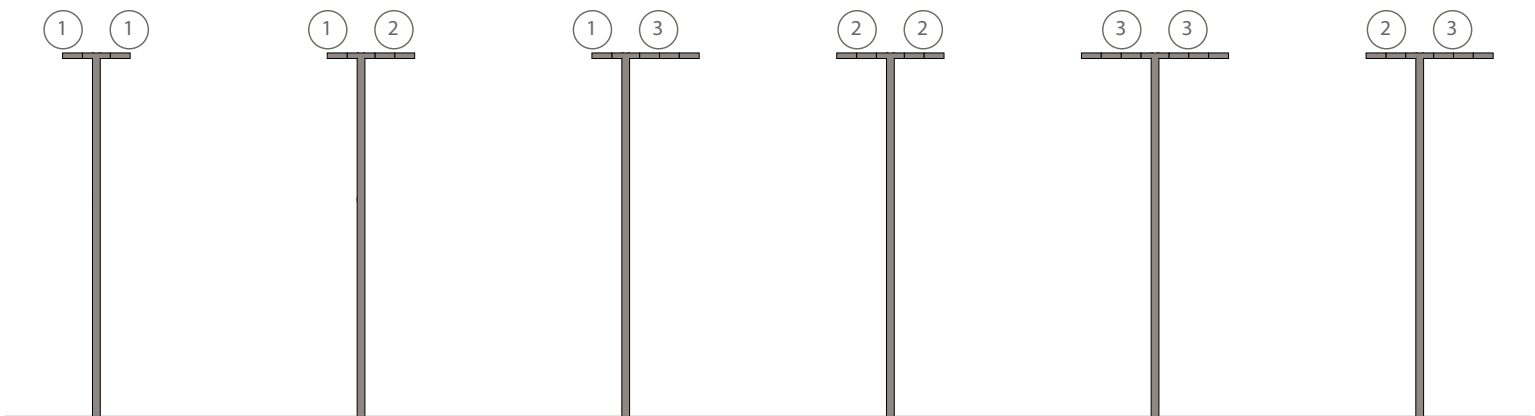
⊥ HRP050\_F\_01    ⊕ HRP050\_M\_01



⊥ HRP050\_F\_01\_01    ⊥ HRP050\_F\_01\_02    ⊥ HRP050\_F\_01\_03  
 ⊕ HRP050\_M\_01\_01    ⊕ HRP050\_M\_01\_02    ⊕ HRP050\_M\_01\_03

### Double pole

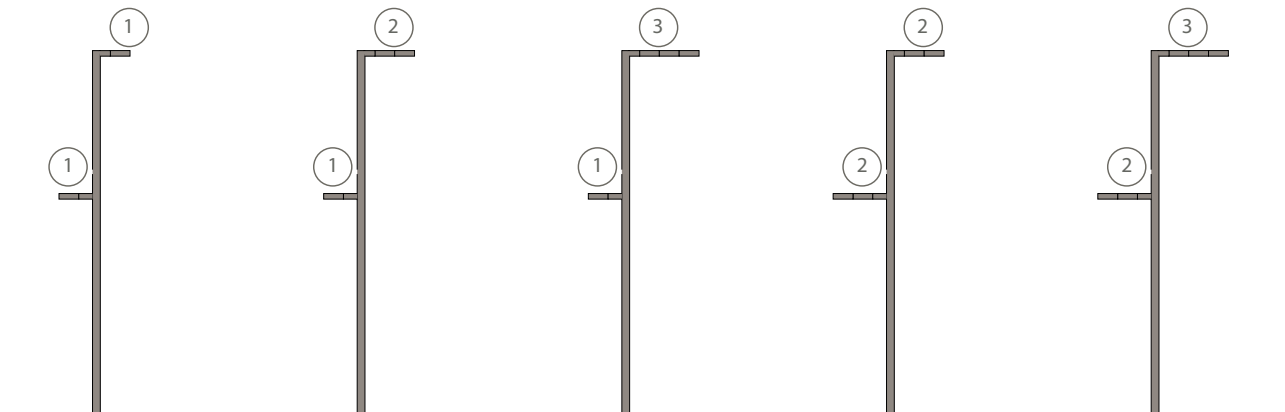
⊥ HRP050\_F\_02    ⊕ HRP050\_M\_02



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 ⊕ HRP050\_M\_02\_01\_01    ⊕ HRP050\_M\_02\_02\_01    ⊕ HRP050\_M\_02\_03\_01    ⊕ HRP050\_M\_02\_02\_02    ⊕ HRP050\_M\_02\_03\_03    ⊕ HRP050\_M\_02\_03\_02

### Split-level pole

⊥ HRP050\_F\_07    ⊕ HRP050\_M\_07



⊥ HRP050\_F\_07\_01\_01    ⊥ HRP050\_F\_07\_02\_01    ⊥ HRP050\_F\_07\_03\_01    ⊥ HRP050\_F\_07\_02\_02    ⊥ HRP050\_F\_07\_03\_02  
 ⊕ HRP050\_M\_07\_01\_01    ⊕ HRP050\_M\_07\_02\_01    ⊕ HRP050\_M\_07\_03\_01    ⊕ HRP050\_M\_07\_02\_02    ⊕ HRP050\_M\_07\_03\_02

## Protection cycles

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting
- First epoxy layer application followed by: Wilting > Drying > Cooling
- Acrylic glaze layer application followed by: Wilting > Drying > Cooling
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting
- Phosphoric pickling bath at a ph level ranging from 1.5 to 3
- Rinsing with demineralised water
- First powder layer application
- Kiln firing
- Application of a final powder layer
- Kiln roasting of the final powder layer at 180°
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting
- Mono-component dip galvanizing followed by: Wilting > Drying > Cooling
- Epoxy micaceous primer application followed by: Wilting > Drying > Cooling
- Acrylic enamel application followed by: Wilting > Drying > Cooling.
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting
- Hot pickling bath in a zinc-based phosphodegreasing solution
- Phospho-chromatation for surfeces clearing
- Washing with water
- Rinsing with demineralised water and subsequent drying
- First powder layer application followed by kiln baking at 180°
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by the succesfull results of specific salt spray test ( all products exceeded widely 2.500 hours) and the strictest international tests, among which FLORIDA TEST.

The salt spray test is made in accordance with standard UNI EN ISO 9227.



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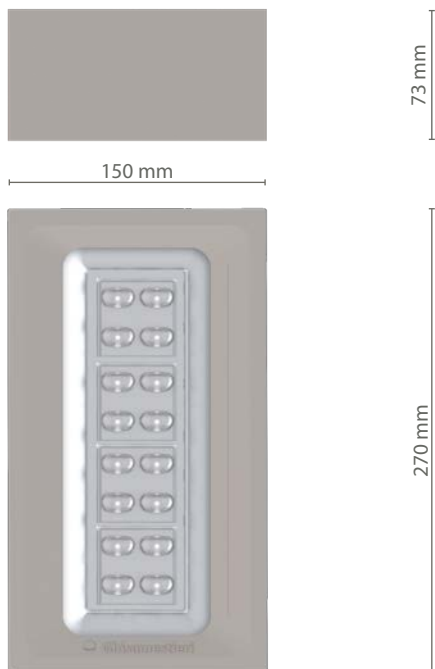
[info@ghisamestieri.it](mailto:info@ghisamestieri.it)  
[www.ghisamestieri.it](http://www.ghisamestieri.it)

## AVAILABLE VERSIONS



### Compact

No openable fixture: equipped with outgoing cable and fast connector IP68.

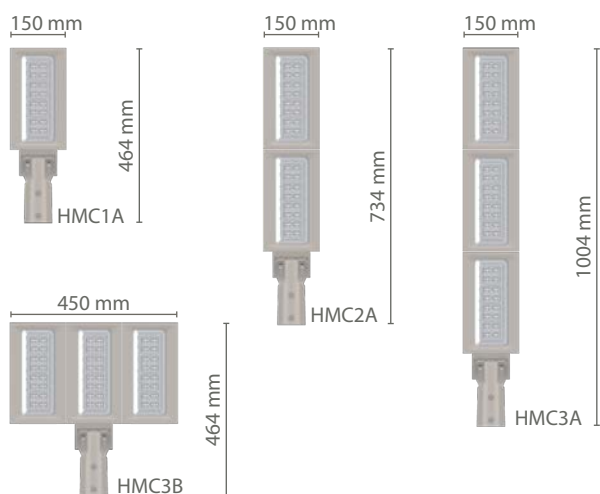


Scale: 1:5

**Max. weight** CXS

4,0 Kg Lateral: 0,02 m<sup>2</sup> | Pian: 0,04 m<sup>2</sup>

## MODULE COMBINING



## FIXING TYPE



Side



Pole-top

Ø 42-60 mm  
Ø 60-76 mm

Adjustable with 5° step  
+5°  
0°  
-15°

Ø 42-60 mm  
Ø 60-76 mm

Adjustable with 5° step  
+15°  
0°

## STANDARD

EN 60598-1, EN 60598-2-3, EN 62471, EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3

## CONFORMITY | PROTECTION

### Conformity



### Insulation classes



### Salt spray test

ISO 9227



### Protection classes



### Vibration test passed

IEC 60068-2-6



### Photobiological safety



Classe 0  
Exempt group  
IEC/TR62471

## PLUS



CUTOFF



OPTICAL FLEXIBILITY



LOW GLARE



IPEA MIN

## LIGHTING FIXTURE FEATURES

### General features

Power source:	220-240V   50/60Hz   tolerance +/-10%   other voltages on request
Current supply:	525mA   700 mA (P <sub>max</sub> [3 modules]= 105 W)
Power Factor   THD:	≥0.95   <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h   L90B10   @700mA
Operational temperature (Ta):	T <sub>min</sub> = -40°C T <sub>max</sub> = +55°C   700 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Impulse withstand up to 10kV CM/DM
Standard functions:	Current fixed   Virtual midnight   1-10V   CLO (Details pag.4)

### Materials

Lighting fixture:	Die cast aluminium   EN1706
	Extruded aluminium   EN573-3
Optical system:	Nano-optics in PMMA
	Plastic reflector metallic painted
Screen:	Ultraclear tempered glass   Th. 4mm
Gaskets:	Silicon
Cable gland:	Polyamide PA66   PG16   Ø 14mm MAX   IP 68
Screws and bolts:	AISI 304 stainless steel
Fixture color:	Light grey Ghisamestieri®

## LED FEATURES

LED data 4.000 K - 700mA:	340 lm/LED   180 lm/W   25°C [Tj]   ≤ 3 step macadam
Colour temperature:	3.000 K   4.000 K   5.700 K   CRI ≥ 70
"Flip chip LED" technology:	High performance and high quality LED equipped with gold electrode; high protection against corrosion and color shifting.

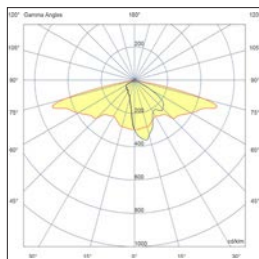
## OPTIONAL

Overcharge protection:	optional - SPD with warning LED
	CLASS 1   CLASS 2
	10kV / 10kA CM/DM
Optional functions:	DALI-DALI2
(Details pag.4)	



### PEDESTRIAN PATHS\\ OPTIC TYPES 2

#### TYPE 2A

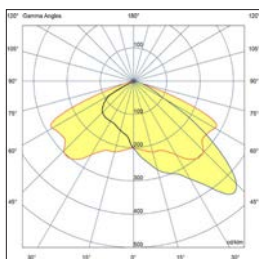


**Asymmetrical light**, designed to suit streets and pedestrian or cycle paths.



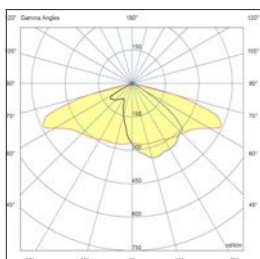
### URBAN AND SUBURBAN STREETS, SQUARES, PARKING LOTS AND ROUNDABOUTS\\ OPTIC TYPES 3

#### TYPE 3A



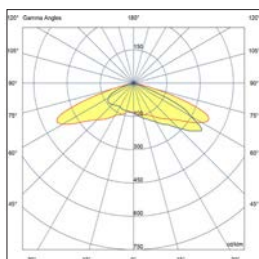
**Asymmetrical light**, designed to suit streets and road wet surface.

#### TYPE 3B



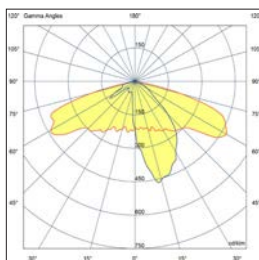
**Asymmetrical light**, designed to suit suburban and urban streets.

#### TYPE 3C



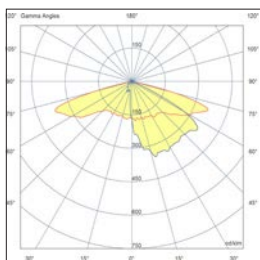
**Asymmetrical light**, designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3D



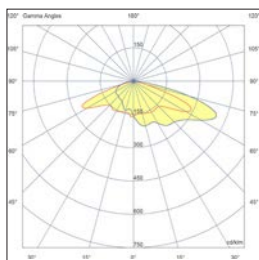
**Asymmetrical light**, designed to suit streets and pedestrian paths.

#### TYPE 3E



**Asymmetrical light**, designed to suit very large streets, parking lots and roundabouts.

#### TYPE 3F

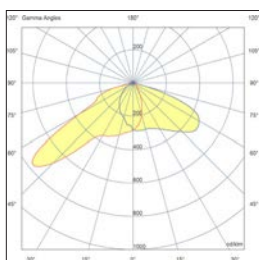


**Asymmetrical light**, designed to suit very large streets and road with a low installation of the lighting fixture, parking lots and roundabouts.



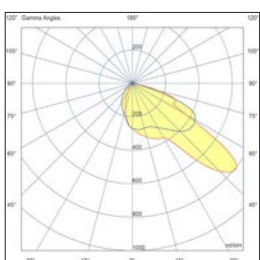
### PEDESTRIAN CROSSINGS\\ OPTIC TYPES 4

#### TYPE 4A



**Asymmetrical light**, designed to suite installation to pedestrian crossings.

#### TYPE 4B

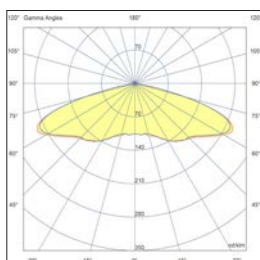


**Asymmetrical light**, designed to suite installation to pedestrian crossings.



### PARKS AND SQUARES\\ OPTIC TYPES 5

#### TYPE 5A



**Symmetrical light**, designed to be installed in parks, squares, parking lots and other large surfaces.

### APPLICATION EXAMPLES\\



TYPE 2A | TYPE 3D



TYPE 2A | TYPE 3D



TYPE 3A | TYPE 3B



TYPE 3C | TYPE 3E | TYPE 3F



TYPE 5A



TYPE 4A | TYPE 4B



TYPE 4A + TYPE 4B




The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, color rendering index CRI 70 min. and a junction temperature  $t_j$  of 25°C. The LED nominal data are extrapolated from the manufacturer documentations.

The lighting fixture measured data refers to GHISAMESTIERI products in a standard version, with 4000 K color temperature, optica type <<Ottica>> and an ambient temperature  $t_a$  of 25 °C.

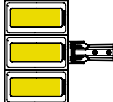
Ghisamestieri offers the possibility of driving the device with custom currents (\*).

To obtain luminous fluxes and efficiencies of the lighting fixture in case of optic type and/or color temperature and/or color rendering index different from the standard use the conversion factors shown in the tables.

### LED modules nominal data (4000 K | CRI 70 min. | $t_j=25^\circ$ )

LED code	I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL04 	525	4255	23,0	185
	700	5394	31,0	174
GL08 	525	8510	46,0	185
	700	10788	62,0	174
GL12 	525	12765	69,0	185
	700	16008	92,0	174

### Lighting fixture measured data (4000 K | OTTICA 3B | $t_a=25^\circ$ )

Order code:	(*) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
HMC1A_GL04 	525	3652	27,0	135
	700 (max)	4723	36,0	131
HMC2A_GL08 	525	7354	52,5	140
	700 (max)	9511	70,0	136
HMC3A_GL12    HMC3B_GL12 	525	11031	77,0	143
	700 (max)	14267	103,0	139

#### OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1A (*)	1,00
2A (*)	0,99
3A   3C   3D   3E   3F	0,99
4A   4B	0,98
5A (*)	1,01

#### Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
2.200 (**)	0,70
3.000	0,94
5.700	1,01

#### CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,93

(\*) See pag.2 to check the optic type availability.

(\*\*) See pag.1 to check the colour temperature availability.



## Functions

### Standard functions

#### Fixed Output

The lighting fixture is set to use a fixed current among the standard ones indicated in the tables on page 3. It is possible to set other currents on customer request (custom).

#### Virtual midnight | Automatic lighting control

The driver is programmed to automatically switch the light On or Off based on the time of the day ensuring high energy saving.

The maximum output is usually set during the first and last hours of operation that statistically are proven to have higher traffic, it will then decrease during the middle hours when there is less traffic. The system is able to automatically regulate itself, identifying the average between the instant it turns on and turns off. This is called "virtual midnight" and is the reference point for reducing the light emission based on the desired profile. The output will automatically adapt to the length of the night throughout the year.

#### 1-10V | Flux control by analogic control

It is possible to adjust the amount of luminous output by means of an analog input signal that has a minimum level of 1V and maximum of 10V. The device is fitted with L-N-1 / 10V cable connection.

#### CLO | Costant lumen output

Considering LED performance deteriorates with use and time, it may be compensated by using a lower than maximum flux output and maintaining it constant in time by progressively increasing the current. In this case maintenance and management costs of the systems are considerably lower.

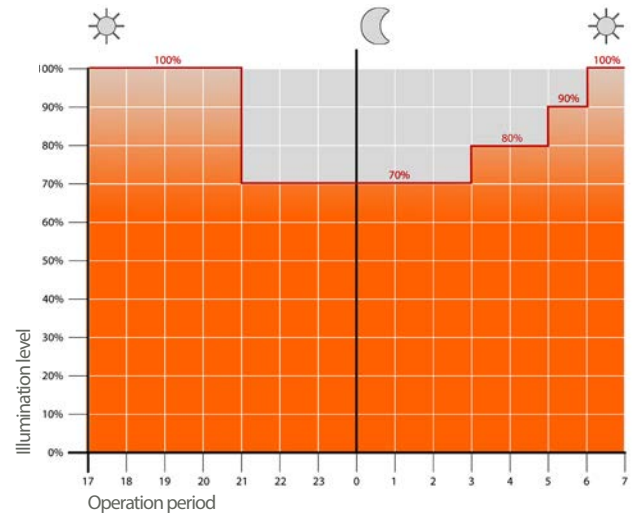
### Optional functions

#### DALI - DALI2 | Controllo e programmazione digitale

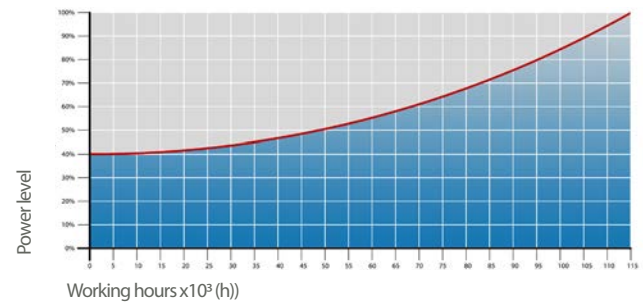
On request, the lighting body can be supplied with a DALI interface. The DALI system allows a lighting system to be controlled by providing control and diagnostic functions.

#### DALI SENSOR

With the DALI SENSOR interface it is possible to manage the functions of the DALI - DALI2 protocol. In addition, there is a low voltage AUX switch to manage remote control systems and external sensors in a Smart City perspective.



Example of 4-step adjustment with virtual midnight



CLO | Costant lumen output

## Protection cycles

Ghisamestieri works with cast iron, steel and aluminum. The materials are selected and processed to maximize performance and quality.

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting;
- First epoxy layer application followed by: Wilting > Drying > Cooling;
- Acrylic glaze layer application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting;
- Phosphoric pickling bath at a pH level ranging from 1.5 to 3;
- Rinsing with demineralised water;
- First powder layer application;
- Kiln firing;
- Application of a final powder layer;
- Kiln roasting of the final powder layer at 180°;
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting;
- Mono-component dip galvanizing followed by: Wilting > Drying > Cooling;
- Epoxy micaceous primer application followed by: Wilting > Drying > Cooling;
- Acrylic enamel application followed by: Wilting > Drying > Cooling;
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting;
- Hot pickling bath in a zinc-based phosphodegreasing solution;
- Specific process for the preparation of surfaces before painting;
- Washing with water;
- Rinsing with demineralised water and subsequent drying;
- First powder layer application followed by kiln baking at 180°;
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by salt spray tests performed in accordance with standard ISO 9227:2017 Neutral Salt Spray test (NSS).

The test was carried out for 8.000 hours at 35 °C and demonstrated through the report test released.



**Ghisamestieri the green way of light s.r.l.**

Legal headquarters:  
Strada Provinciale Specchia - Alessano, 68 • 73040 (LE)

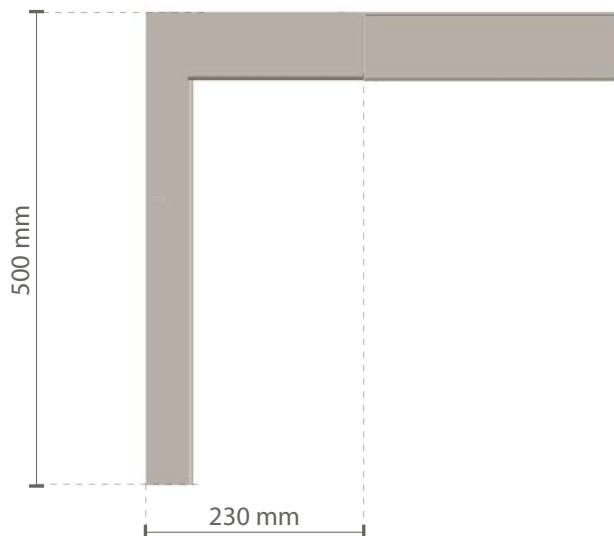
Administrative and operational headquarters:  
Via Grande n°226 • 47032 Bertinoro (FC)

T +39 0543 462611  
F +39 0543 449111

**info@ghisamestieri.it**  
**www.ghisamestieri.it**

# Hulla Regolo wall bracket

Product code: **HRW**



Scale: 1:10

The wall bracket is predisposed and equipped for the installation of Hulla lighting fixture in single or double version (see "module combining" schedule in the box beside).

## Conformity



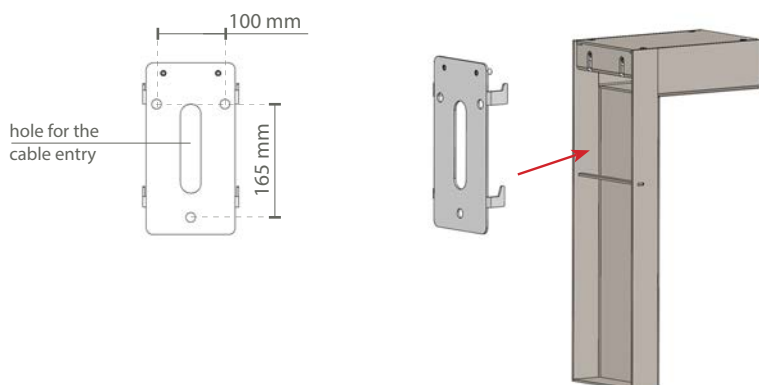
## Geometry and mechanical features

Height:	500 mm
Length:	230 mm
Weight:	8,4 Kg
Extension:	See the box beside

## Materials | Color

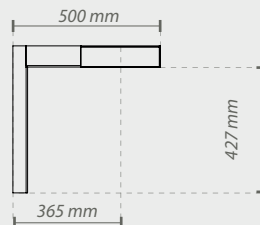
Bracket (A):	S235 steel   EN 10083-1
Wall fixing plate (B):	S235 steel   EN 10083-1
Lighting fixture fixing plate (C):	S235 steel   EN 10083-1
Screws and bolts:	AISI 304 stainless steel
Color:	Light grey Ghisamestieri®

## Wall fixing plate (B) Scale: 1:10

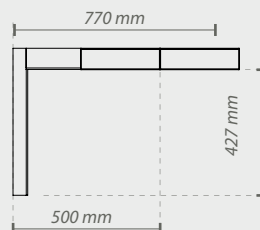


## Module combining

□ Esa lighting fixture - single version  
Cod. **ETW\_01**



□□ Esa lighting fixture - double version  
Cod. **ETW\_02**



## Protection cycles

### GALVANIZED STEEL

#### Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

- Micro sandblasting
- First epoxy layer application followed by: Wilting > Drying > Cooling
- Acrylic glaze layer application followed by: Wilting > Drying > Cooling
- Packing at least after 24-hour-drying at room temperature.

#### Protection of galvanized steel surfaces for brackets and pastorals

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting
- Phosphoric pickling bath at a ph level ranging from 1.5 to 3
- Rinsing with demineralised water
- First powder layer application
- Kiln firing
- Application of a final powder layer
- Kiln roasting of the final powder layer at 180°
- Cooling.

### CAST IRON

#### Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

- Surface micro shotblasting
- Mono-component dip galvanizing followed by: Wilting > Drying > Cooling
- Epoxy micaceous primer application followed by: Wilting > Drying > Cooling
- Acrylic enamel application followed by: Wilting > Drying > Cooling.
- Packing at least after 24-hour-drying at room temperature.

### DIE-CAST ALUMINIUM

#### Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

Brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance. The cycle consists of the following steps:

- Micro sandblasting
- Hot pickling bath in a zinc-based phosphodegreasing solution
- Phospho-chromatation for surfeces clearing
- Washing with water
- Rinsing with demineralised water and subsequent drying
- First powder layer application followed by kiln baking at 180°
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by the succesfull results of specific salt spray test ( all products exceeded widely 2.500 hours) and the strictest international tests, among which FLORIDA TEST.

The salt spray test is made in accordance with standard UNI EN ISO 9227.



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[www.ghisamestieri.it](http://www.ghisamestieri.it)

# ENVIRONMENTAL IMPACT REPORT

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*For:*

**PROPOSED MEDICAL OFFICE  
SITE DEVELOPMENT**

---

*Located:*

**20 HENRY GRAF JR. ROAD  
NEWBURYPORT, MASSACHUSETTS**

---

*Submitted to:*

**TOWN OF NEWBURYPORT**

---

*Prepared For:*

**SPORTS MEDICINE NORTH ORTHOPEDIC SURGERY, INC.  
C/O CONSERV GROUP INC.  
110 STATE ROAD  
SAGAMORE BEACH, MASSACHUSETTS 02562**



**Professional Civil Engineering • Project Management • Land Planning  
150 Longwater Drive, Suite 101, Norwell, Massachusetts 02061  
Tel.: (781) 792-3900 Facsimile: (781) 792-0333  
[www.mckeng.com](http://www.mckeng.com)**

**March 17, 2020**

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Wetland Resources	Page 1
Stormwater Design	Page 3
SOILS	Page 6
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ARCHITECTURAL STYLE	Page 9
OTHER PERMITS REQUIRED	Page 10

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FIGURE 1	USGS Locus Map
FIGURE 2	FEMA Flood Map
FIGURE 3	NHESP Map
FIGURE 4	NRCS Soils Map

## **ENVIRONMENTAL IMPACT ASSESSMENT AND MITIGATION MEASURES**

### **Proposed Medical Facility 20 Henry Graf Junior Road Newburyport, Massachusetts**

#### **INTRODUCTION**

The project proponent, Sports Medicine North Orthopedic Surgery, Inc. and ConServ Group Inc., proposes to develop the approximate 2-acre parcel at 20 Henry Graf Jr. Road (Assessor's Parcel 82-2-B) as a medical office use. The proposed development will consist of the construction of a 20,000 square ft. (GFA) medical office building with related site improvements including asphalt parking area and access driveway, landscaping, stormwater management facilities, utility connections and other relevant infrastructure. The site is located within the Town of Newburyport's Industrial I-1 Zoning District. The site is not located within a DEP Zone 2 or Town of Newburyport's Aquifer Protection Zone. Refer to Figure 1 – USGS Map.

The property has frontage on Henry Graf Jr. Road to the east and is bordered by developed commercial and light industrial property to the north, south and west. The parcel is currently undeveloped and is primarily devoid of vegetation. The site has historically been used as a contractor's yard with storage of heavy equipment and large stockpiles of various types of fill. The site is bounded by bordering vegetated wetlands located along all sides. The topography of the site ranges in elevation from approximately 16 ft. (NAVD 1988) slightly west of the center of the site to elevations of approximately 13-14 ft. (NAVD 1988) at the wetland boundaries. The site has a municipal drainage easement located at the eastern property line along the frontage of Henry Graf Jr. Road.

The existing and proposed site conditions are illustrated on the site development plans entitled, "Site Development Plans, 20 Henry Graf Jr. Road, Newburyport, Massachusetts" prepared by McKenzie Engineering Group, Inc. (MEG) dated March 3, 2020.

#### **SURFACE AND GROUNDWATER POLLUTION**

##### **Wetland Resources**

The site has bordering vegetated wetlands located adjacent to the north, south, east and west property lines under the Wetlands Protection Act (MGL Ch. 131 s. 40) and its Regulations and

the Newburyport Wetland Protection Regulations. The limit of the bordering vegetated wetland resource area on the site was delineated by Hughes Environmental Consulting in January 2020.

The site is located within the Zone X of the Flood Insurance Rate Map, as shown on the current FEMA Flood Insurance Rate Map Panel No. 25009C0117G with an effective date of July 16, 2014. Refer to Figure 2 – FEMA Flood Map. The site does not contain any certified vernal pools and is not located within an area mapped as estimated or priority habitat according to the Massachusetts Division of Fisheries and Wildlife Natural Heritage and data provided by as determined by reference to Mass GIS. Refer to Figure 3 – Natural Heritage & Endangered Species Map. The site is also not located within an Area of Critical Environmental Concern (ACEC).

The design of the project respects the sensitive bordering vegetated wetland resource areas found adjacent to the northern, southern, eastern and western property lines and minimizes impacts by maximizing buffers between resource areas and proposed construction barriers. Work within the 100 ft. buffer zone will be limited to that required to properly construct the proposed parking area, landscaped areas and incidental grading. Pesticides and herbicides shall not be used within the limits of the 100' buffer zone to the wetland resource areas. Fertilizers that are used within this zone should be restricted to the use of organic fertilizers only. The proposed compost filter tube erosion control barrier will serve to prevent the migration of sediments towards wetland resource areas.

The project also involves a plan for restoration of the buffer zone between the proposed parking area and bordering vegetated wetlands that will serve to enhance the water quality of the wetland resource. Refer to the Planting Plan included in the Site Development Plans.

### **Stormwater Design**

The design of the site development will incorporate features intended to mitigate potential water quality and quantity impacts from the site's stormwater runoff both during and after construction. No long-term impacts to the environment are anticipated. The project's development will not adversely affect the quality or quantity of any public or private water supply. The design of the site development will incorporate features intended to mitigate potential water quality and quantity impacts from the site's stormwater runoff both during and after construction. The



stormwater management system has been designed by implementing “best management practices” in order

-6-

to ensure compliance with the Department of Environmental Protection’s (DEP) Stormwater Management Regulations. Refer to the Post-Development BMP Operation and Maintenance Plans prepared by MEG dated March 3, 2020. The stormwater management system has been designed to fully comply with the Standards of the Department of Environmental Protection’s (DEP) Stormwater Management Regulations. The system will attenuate peak runoff rates for statistical 2, 10, 25, and 100-year storm events. Renovation of stormwater will be provided by a treatment stream consisting of parking lot maintenance and sweeping, deep sump catch basins, proprietary pre-treatment units and stormwater detention basins to mitigate the anticipated pollutant loading. The implementation of these measures will ensure that there will be no increase in post-development rates of runoff from this development.

## **SOILS**

The soil types as identified by the Soil Survey, Essex County, MA prepared by the NRCS Soil Conservation Service (NRCS) are classified as 16A-Scantic Silt Loam, 0 to 3 percent slopes with hydrologic soil group (HSG) C/D. Soil testing conducted by McKenzie Engineering Group, Inc. (MEG) and by CGE Engineering, Inc. (CGE) on December 4, 2019 identified the soils to be fill comprised of silty, gravelly sand underlain by a clay parent layer. Refer to Figure 4 - Soil Map for the NRCS delineation of soil types. Refer to Appendix E in the report entitled “Drainage Calculations and Stormwater Management Report” dated March 17, 2020 prepared by MEG for soil testing results and the Engineers Field Report prepared by CGE.

The objective in designing the project was to maintain existing grades to the extent feasible in order to ensure the preservation of existing drainage patterns and minimize erosion or any potential adverse impacts on the natural environment.

The parcel is currently undeveloped and is primarily devoid of vegetation. The site has historically been used as a contractor’s yard with storage of heavy equipment and large stockpiles of various types of fill. The site is currently unstabilized with bare gravel surface extending to the boundary of the bordering vegetated wetlands. The implementation of the proposed project will result in a more favorable condition than the present as the site will be

permanently stabilized with no potential for erosion or migration of sediments or pollutants into the downgradient bordering vegetated wetlands.

-8-

Compost filter tube (Silt sock) erosion control barriers will be placed at the limit of work prior to the commencement of any construction activity. The integrity of the silt sock will be maintained by periodic inspection and replacement as necessary. The silt sock will remain in place until the first course of pavement has been placed and all side slopes have been loamed and seeded and vegetation has been established. The potential for temporary impacts to wetlands due to erosion and migration of sediments into adjacent wetlands will be mitigated by adherence to basic erosion control practices. Refer to the Erosion Control details on the Site Development Plans and BMP Construction Phase Operation and Maintenance Plan for proposed erosion control measures to be employed for the project.

## **TRAFFIC IMPACTS**

The traffic volume anticipated as a result of the site development will result in negligible impacts on existing traffic operations on Henry Graf Jr. Road and the surrounding roadway network. Site distances at the proposed driveway intersection at Henry Graf Jr. Road will exceed the requirements of the American Association of State Highway Officials as required in Sections VI-J & VI-K of the Newburyport Zoning Bylaw. The design will ensure that there will be an unobstructed sight distance along both approaches to the site on Henry Graf Jr. Road, and at the included corners of the driveway for a distance sufficient to allow the operators of both vehicles approaching simultaneously to see each other in time to prevent a collision. The clear sight distance will conform to the AASHTO requirements for sight distance at at-grade intersections for passenger vehicles (Case III-Stop Control on Minor roads).

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)<sup>1</sup> for similar land use as the proposed use was employed. ITE Land Use Code (LUC) 720, Medical-Dental Office Building, with the independent variable of 1,000 sq. feet gross floor area equal to 20 was used to develop the anticipated traffic characteristics of the project.

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<sup>1</sup> ITE – *Trip Generation Manual*, Ninth Edition; Institute of Transportation Engineers; Washington, DC; 2012

## PROPOSED PROJECT TRIP-GENERATION SUMMARY

---

Time Period/Direction	Proposed Medical Office Building**
Weekday Daily	602
Weekday Morning Peak Hour:	
Entering (66%)	50
<u>Exiting (34%)</u>	<u>25</u>
Total	75
Weekday Evening Peak Hour:	
Entering (40%)	36
<u>Exiting (60%)</u>	<u>53</u>
Total	89

---

\*\*Based on ITE LUC 720, Medical-Dental Office Building

The project will result in 602 vehicle trips on an average weekday (50% entering and 50% exiting), with approximately 75 vehicle trips (50 entering and 25 exiting) during the weekday morning peak hour and 89 vehicle trips (36 entering and 53 exiting) during the weekday evening peak hour. This translates into approximately 12.5 trips every 10 minutes for the morning peak hour and 14.8 trips every 10 minutes for the evening peak hour. The Level of Service (LOS) for nearby intersections is not expected to change from their current conditions as a result of this site development.

### ARCHITECTURAL STYLE

The proposed Sports Medicine North facility will accommodate a staff of 29 people in a 20,000 square foot medical office building. It will be two stories each with 10,000 square feet of area.

The building is designed to fit visually into the neighborhood which includes many single-story structures as well as structures with up to four or five stories.

-10-

The cornerstone practice will be Sports Medicine North, which will occupy half of the first floor and the entire second floor. The remainder of the first floor will be for prospective tenants.

The building is of simple and traditional design with a brick façade like many other structures in the area. The fenestration will be individually punched window openings of storefront design except at the main entrances, which will feature larger window openings and a suspended, protective canopy. The main entrance is centrally sited at the southeast corner of the building so as to be equally accessible by patients using either the front or the side parking lot. The rear entrance on the west side of the building will be primarily for use by employees.

The building and canopy will both have flat membrane roofs and will incorporate internal roof drains, similar to most of the adjacent structures.

Specific color choices of the brick façade and windows have yet to be determined. It is anticipated to be similar to adjacent structures or alternatively a subtle, light colored brick. Aluminum window finishes and storefront and spandrel glass will be selected to compliment the final brick selection.

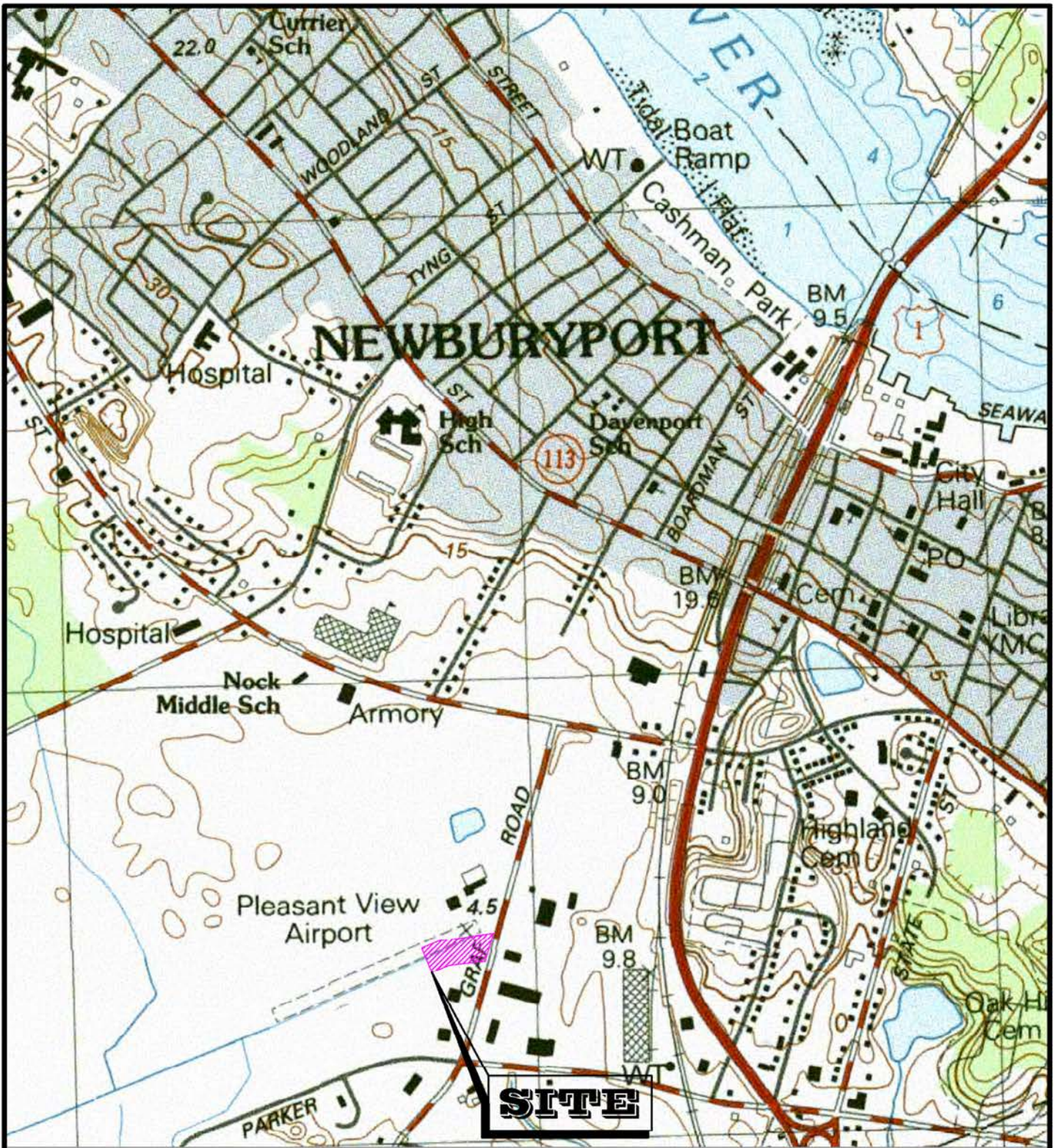
It is anticipated that building mounted signage will incorporate the business name and logo and will be visible from the south and east elevations. In addition, street address and directory signage will be placed near the street entrance and will be visible from both directions. All signage will comply with local sign codes and ordinances.

## **OTHER PERMITS REQUIRED**

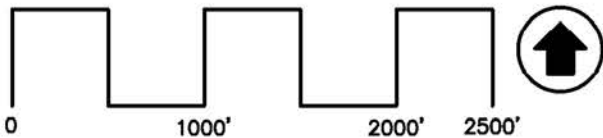
There are no permits required from the Zoning Board of Appeals.

The project will require the following local, state and federal permits:

- Order of Conditions from the Conservation Commission.
- Site Plan Review and Special Permit from the Planning Board
- EPA NPDES Notice of Intent.



**FIGURE - 1**



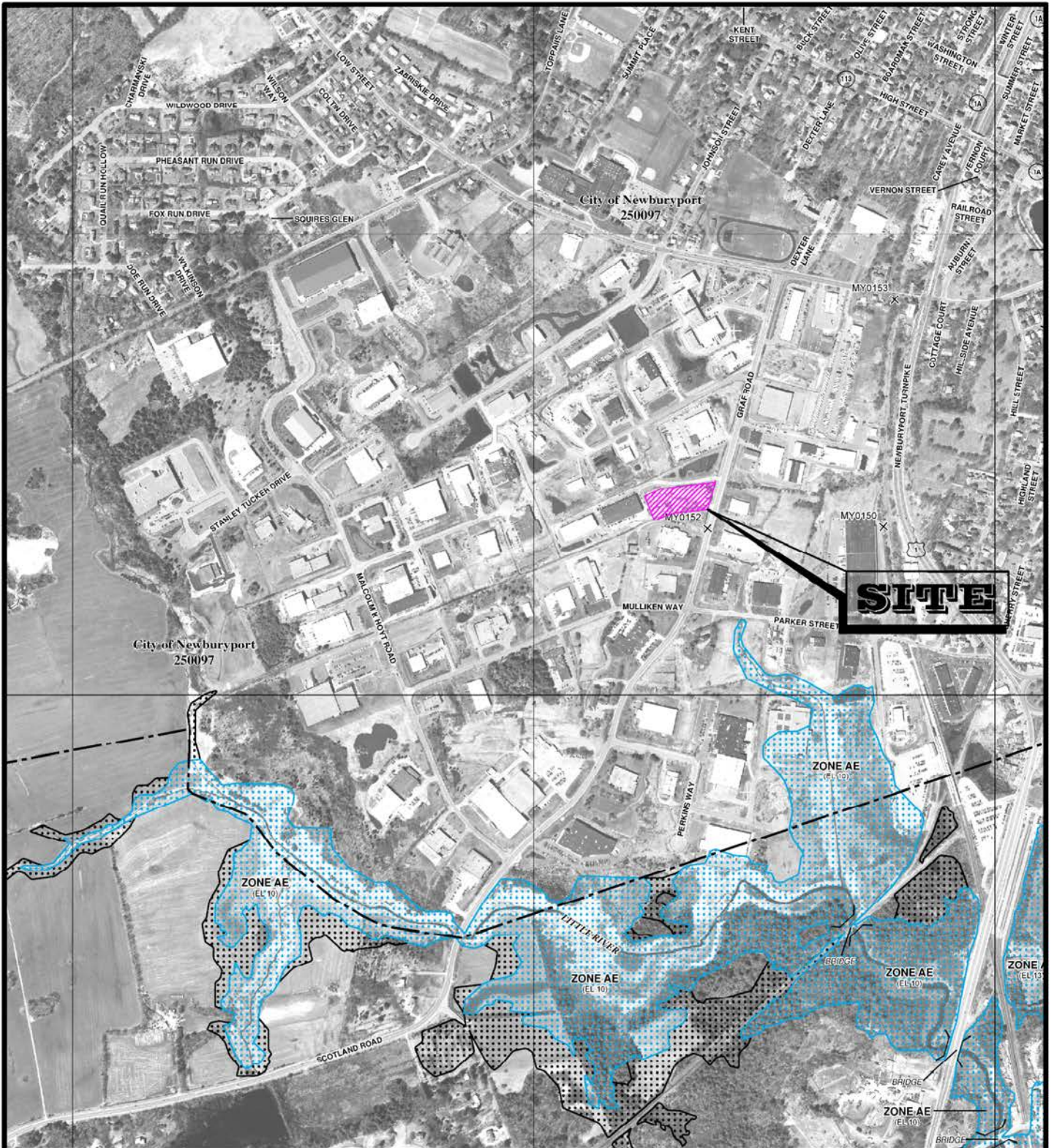
U.S. GEOLOGICAL SURVEY  
7.5 X 15 MINUTE SERIES



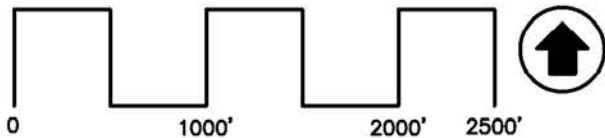
Assinippi Office Park  
150 Longwater Drive, Suite 101  
Norwell, MA 02061  
P: 781.792.3900  
F: 781.792.0333  
www.mckeng.com

**USGS LOCUS MAP**

20 HENRY GRAF JR. ROAD  
(ASSESSOR'S PARCEL NO. 82-2-B)  
NEWBURYPORT, MASSACHUSETTS



**FIGURE - 2**



COMMUNITY PANEL NO: 25009C0117G  
EFFECTIVE DATE: JULY 16, 2014

© MCKENZIE ENGINEERING GROUP, INC.

DATE: JANUARY 20, 2020



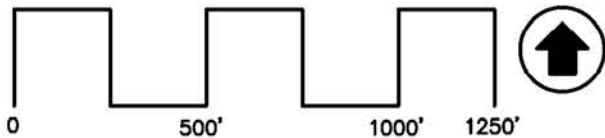
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**FEMA FLOOD MAP**

20 HENRY GRAF JR. ROAD  
(ASSESSOR'S PARCEL NO. 82-2-B)  
NEWBURYPORT, MASSACHUSETTS



**FIGURE - 3**



Assinippi Office Park  
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**NATIONAL HERITAGE AND  
 ENDANGERED SPECIES MAP**

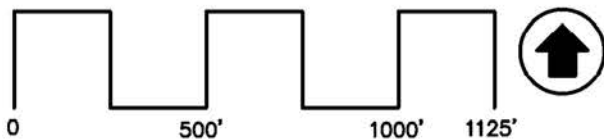
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 NEWBURYPORT, MASSACHUSETTS



SOIL KEY

SOIL CLASSIFICATION	DESCRIPTION	HYDROLOGIC SOIL GROUP
16A	SCANTIC SILT LOAM, 0-3% SLOPES	C/D
602	URBAN LAND	C/D (SURROUNDING SOILS)

**FIGURE - 4**



NRCS SOIL SURVEY  
NORFOLK COUNTY



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**NRCS SOILS MAP**

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